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THE
NATURAL HISTORY
OF
BRITISH INSECTS;
EXPLAINING THEM
IN THEIR SEVERAL STATES,
WITH THE PERIODS OF THEIR TRANSFORMATIONS,
THEIR FOOD, ECONOMY, &c.
TOGETHER WITH THE
HISTORY OF SUCH MINUTE INSECTS
AS REQUIRE INVESTIGATION BY THE MICROSCOPE.

THE WHOLE ILLUSTRATED BY
COLOURED FIGURES,
DESIGNED AND EXECUTED FROM LIVING SPECIMENS.

BY E. DONOVAN.

VOL. XII.

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PLATE CCCXCVIII.

TENTHREDO FASCIATA.

BANDED SAW-FLY.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a horny mandible, curved, and toothed within; jaw straight and obtuse at the tips: lip cylindrical and three cleft: feelers four unequal and filiform: wings flat and tumid: sting composed of two ferrated laminæ and scarcely disclosed.

SPECIFIC CHARACTER

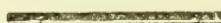
AND

SYNONYMS.

Deep black: antennæ black: upper wings with a fuscous band.

TENTHREDO FASCIATA: atra, antennis nigris, alis primoribus fascia fusca. *Fabr. Sp. Inf.* 1. p. 407. N. 8.—*Gmel. Syst. Nat.* 2655. 7.

Tenthredo antennis clavatis nigris, abdomine glabro atro, alis superioribus fascia fusca. *Linn. Syst. Nat.* 12. 2. p. 921, n. 7.—*Fn. Suec.* 1538.



This is a rare insect in England. Linnæus describes it as a native of Sweden, Panzer as a German species, and by other writers it is mentioned as a general inhabitant of Europe.

Fabricius

Fabricius speaks of a small white band at the base of the first abdominal segment of this species: in our British specimen, the whole of this segment is of a pale or whitish colour instead of the base only, and it appears from the figure given by Panzer, *Fn. Germ.* that the same circumstance is observable in the individual he has delineated.

The larva, and metamorphoses of this species of *Tenthredo* has not hitherto been ascertained by any writer.



PLATE CCCII.

TENTHREDO SERICEA.

SILKY SAW-FLY.

HYMENOPTERA.

GENERIC CHARACTER

Mouth with a horny mandible, curved and toothed within: jaw straight and obtuse at the tips: lips cylindrical and three cleft: feelers four unequal and filiform: wings flat and tumid: sting composed of two ferrated laminæ, and scarcely disclosed.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ clavated, reddish, or black; abdomen green, or dusky, and bronzed.

TENTHREDO SERICEA: antennis clavatis luteis, thorace atro: abdomine aeneo. *Linn. Syst. Nat. 2.* 921. 8.—*Schaeff. Elem. Tab. 51.* β *Tenthredo nitens* antennis clavatis luteis, abdomine viridi cœrule-scente nitente. *Linn. Syst. Nat. 2.* 922. 10.—*Fn. Suec.* 1532.—*Sulz. Inf. tab. 18.* fig. 109.

The two sexes of *Tenthredo Sericea* differ so greatly from each other, that some authors have mistaken them for distinct species.

Linnaeus

Linnæus describes the male as a variety of the female. The male insect, which we have represented, is of a beautiful silky greenish colour, glossed with a brassy lustre, the antennæ clavated and brown: legs yellow, except at the base of the thighs, which are black, and the five last joints of the abdomen marked in the center with a broad stripe of dark, or velvety black. The female has the colours throughout more obscure, the antennæ are dusky, approaching black; the thorax dark, and the abdomen brassy, but tinged with a sombre hue instead of green, and the wings are rather darker than in the male.

This elegant species is inserted among our British Insects upon the authority of two specimens, which we are credibly informed were found in England. Fabricius describes it as the offspring of a short green-coloured larva, which is marked with two yellow lines, and has a cinereous head, with a reddish brown band. It feeds on the alder.



PLATE CCXXXIV.

TENTHREDO LUTEA.

YELLOW SAW-FLY.

HYMENOPTERA.

Wings four, generally membranous. Tail of the females armed with a sting.

GENERIC CHARACTER.

Mouth with a horny curved mandible, toothed within, the jaw straight, and obtuse at the tip, the lip cylindrical and trifid: feelers four, unequal and filiform: wings tumid, the lower ones less: sting composed of two ferrated laminæ, and almost secreted: stemmata three.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ clubbed, yellow. Abdomen yellow, with the second segment black.

TENTHREDO LUTEA: antennis clavatis luteis, abdominis segmentis plerisque flavis. *Linn. Syst. Nat. 2. 921. 3.—Fn. Sv. 1534.*

Fab. Ent. Syst. I. 2. p. 105. 138. 3.

Roef. Inf. 2. Vespa. tab. 13.

Schäff. Ion. tab. 103. fig. 2. 3.

Degeer. Inf. 2. 2. 223. 7. tab. 33, fig. 8. 16.

G

Very

Very uncommon in this country. The larva has been found on the Willow, but unless taken when ready to become a pupa, it is impossible to rear it to the winged state. We are little acquainted with the peculiar habits of these Insects, and cannot therefore feed them in a proper manner.

Most of the Tenthredines enshroud themselves in a net-work covering, and remain in the earth till the Fly burst forth; others fasten the web against the branches of trees, or on the trunk near the earth. The habits of *Tenthredo lutea* are very similar to those of *T. Vitellinæ*; the winged Insect appears in June.





PLATE CCCCXLIV.

TENTHREDO VIRIDIS.

GREEN SAW-FLY.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a horny curved mandible, toothed within; the jaw straight and obtuse at the tip: lip cylindrical and trifid: feelers four, unequal, and filiform: wings tumid, the lower ones smaller: sting composed of two ferrated laminæ and almost secreted: stemmata three.

SPECIFIC CHARACTER

AND

SYNONYMS.

Green: head and thorax, characterised with black: abdomen with black spots.

TENTHREDO VIRIDIS: capite thoraceque supra characteribus nigris. *Geoff. Inf.* 2. 271. n. 1.

Tenthredo viridis: antennis septemnodiis, corpore viridi, abdomine supra fusco. *Linn. Syst. Nat.* 2. 924. 27.—*Fn. Suec.* 1554.—*Fabr. Ent. Syst. T.* 2. p. 113. n. 33. *Sulz. Inf. tab.* 18. *fig.* 112.

The ground colour of this elegant insect varies from a pale yellow to bright green, and sometimes to brown, the markings of black lines appear

appear to be pretty nearly the same in all the varieties. This insect is common in the summer season, and is chiefly found on the Alder, on which it is supposed to feed.

The smallest figure in our plate denotes the natural size.



PLATE CCCCXLI.

FIG. I. I.

TENTHREDO COLLARIS.

COLLARED SAW FLY.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a horny curved mandible, toothed within; the jaw straight and obtuse at the tip, the lip cylindrical and trifid: feelers four, unequal and filiform: wings tumid, the lower ones less: sting composed of two ferrated laminæ and almost secreted: stemmata three.

SPECIFIC CHARACTER.

TENTHREDO COLLARIS. Black anterior margin of the thorax rufous.

TENTHREDO OPACA: antennis septemnodiis atra thorace utrinque macula apicis rufa. *Fabr. Ent. Syt. T. 2. p. 120?*



A scarce species shewn both in its natural size, and magnified. It is found in gardens.

FIG. II.

TENTHREDO SUCCINCTA.**BROAD YELLOW BANDED TENTHREDO.****SPECIFIC CHARACTER.**

Black : margin of the thorax, scutel, and two middle abdominal segments yellow : legs yellow, thighs black.

Found on plants in May and June.



PLATE CLXIV.

TENTHREDO ROSÆ.

HYMENOPTERA.

Wings four, generally membranous. Tail of the females armed with a sting.

GENERIC CHARACTER.

Abdomen of equal thickness, and closely connected to the thorax. Sting, ferrated, between two valves. Second wings shortest.

SPECIFIC CHARACTER

AND

SYNONYMS.

Antennæ, head, and thorax black, with a yellow spot on each side of the latter. Abdomen yellow. A black spot on the anterior margin of the wings.

TENTHREDO ROSÆ: antennis septemnodiis nigra, abdomine flavo, alarum anteriorum costa nigra.

Syst. Ent. 322. 26.

Fab. Spec. 1. 413. 39.

Tenthredo Rosæ antennis clavato, filiformibus nigra abdomine flavo, alarum anticarum costa nigra.

Lin. Syst. Nat. 2. 925. 30.

Fn. Sv. 1555.

Tenthredo trocea thorace supra, capite alarumque margine exteriori nigris. *Goff. Inf.* 2. 272. 4.

Tenthredo

*Tenthredo flava, antennis clavatis triarticulatis, capite thoraceque nigris,
alis anticis nigro maculatis* Degeer. *Ins.
2. 2. 279. 28. tab. 39. fig. 27.*
Merian. Europ. tab. 144.
Goed. Ins. 2. tab. 3.
Scop. carn. 722.
Reaum. Ins. 5. tab. 14. fig. 10, 12.

In the larva state, this species feeds on the leaves of the Rose, and from that peculiarity it has received its significant specific name, *rosæ*. The larva casts its skin several times before it becomes a pupa, its exuviae we frequently find adhering to rose-leaves. When the larva is in its last skin it is yellowish, inclining to orange, with many minute black specks, disposed in ringlets, on every joint; but in the early stages of its growth we find them of several shades of colours, between green and orange, and some partake of both colours, and are speckled with black, as in the last skin. The larva is very tender, and, we suspect, is liable to some distemper of a very different kind from any noticed to affect other insects; it then appears sickly, and is covered with a whitish down, or powder, which flies off on the slightest touch. We have often found the larva of another species of the same genus covered with this kind of white powder, but as they always died, it is impossible to determine to what insect they belonged.

In the pupa state, the outer case is not perfectly oval, but rather flattened on the sides; it is generally fastened on a stalk. The perfect insect is found in great plenty during most of the summer months.

Several early systematic writers placed this insect amongst those whose antennæ consisted of several joints, or articulations: Whence Linnæus* included the number of the joints with the specific cha-

* In the last edition of the *Syst. Nat.* "antennis septemnodiis, &c." is changed for
"antennis clavato filiformibus, &c."

racter; and in the Species Insectorum Fabricius has followed the same arrangement. Though with the assistance of a microscope we may discover in this, and other species, the exact number of the articulations described, yet they are too minute to serve as part of a good specific character, which should, if possible, be selected from the most conspicuous and peculiar parts of the insect. Fabricius seems to have been aware of this in his last work, *Entomologia Systematica**; and has made a very judicious alteration; though it appears singular for a systematic writer to change “*Antennis filiformibus articulis. 7—9.*” for “*Antennis inarticulatis, extrorsum crassioribus.*”

* *Tom. 2. p. 109. 18.*



PLATE CCCCLXXXIII.

SIREX DROMEDARIUS.

DROMEDARY SAW-FLY.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a thick horny truncated short denticulated mandible : feelers four, the posterior ones longer and thicker upwards : antennæ filiform, of more than twenty-four equal articulations : sting exserted, serrated, stiff : abdomen sessile, terminating in a point : wings lanceolate, incumbent, the lower ones shorter.

SPECIFIC CHARACTER

AND

SYNONYMS.

Abdomen black, rufous in the middle, with a white dot on the side of each segment : shanks white at the base.

SIREX DROMEDARIUS : abdomine atro : medio rufo ; puncto untrinque albo, tibiis bafi albis. *Fabr. Ent. Syst. T. 2. p. 128. 16.—Rofs. Fn. Etr. 2. 34. 737.—Gmel. 2673. 5.*

This elegant little insect is most accurately and minutely described by Fabricius*, from a specimen taken at Kiel, in Prussia, and preserved in the cabinet of Daldorf. According to Rossius, it is also a native of Italy. We believe the species has not been before noticed as an inhabitant of Britain.

Our drawings are taken from a specimen in the cabinet of Mr. W. Leach, F. L. S. The smaller figure denotes the natural size.

It should be observed, that the antennæ do not strictly agree with those of the *Sirex* genus in general, the joints being fewer in number, and exhibiting also some less material difference in their general structure.

* *Statura & summa affinitas S. Cameli. Caput globosum, nigrum lineolis duabus verticalibus albis. Thorax antice angustatus, niger puncto ante alas albo. Alæ obscuræ. Abdominis segmentum 1, 2 nigra, 3, 4, 5, 6, 7 rufa, 8 nigrum macula utrinque alba, ♀ nigrum, immaculatum.*



PLATE CCCCXL,

SIREX BIMACULATUS.

BIMACULATED SAW-FLY.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a thick, horny, truncated, short, denticulated mandible: feelers four, the posterior part longer and thicker upwards: antennæ filiform, of more than twenty-four equal articulations: sting exserted, ferrated, and stiff: abdomen sessile, terminating in a point: wings lanceolate and incumbent, the lower ones shorter.

SPECIFIC CHARACTER.

SIREX BIMACULATUS. Abdomen yellow: a black spot on the first and three posterior rings: thorax subfuscous, with two black spots.



This is a curious species, and differs apparently from any of the *Sirex* genus at present described. The head and thorax is fuscous, the latter marked in the middle with two blackish oblong spots. The body is orange with black spots, and the legs orange having the posterior pair marked at the lower end of each principal joint with black. The legs are compressed. Wings reddish-brown. The figure in the plate is of the natural size.



PLATE CCCCXIII.

BANCHUS PICTUS.

HYMENOPTERA.

GENERIC CHARACTER.

Feelers four, elongated, with the joints cylindrical: lip at the base cylindrical and horny, tip membranaceous, rounded, and entire: antennæ fetaceous.

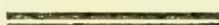
SPECIFIC CHARACTER

AND

SYNONYMS.

Black variegated with yellow; scutel somewhat spinous.

BANCHUS PICTUS: niger flavo varius scutello subspinoso. *Fabr.*
Supp. Ent. p. 234. n. 7.



Described by Fabricius as a native of Germany from the cabinet of Smidt.—Not before noticed as a British species.

The smallest figure denotes the true size of this curious insect.



PLATE CCXXV.

SIREX SPECTRUM.

BLACK-BODIED TAILED-WASP:

HYMENOPTERA.

Wings four, membranaceous in general. Tail of the females armed with a sting.

GENERIC CHARACTER.

Mouth with a thick, horny, truncate, short, denticulate mandible: feelers four, the hind ones longer and thicker upwards: antennæ, filiform, of more than twenty-four equal articulations: sting exerted, serrated, and stiff: abdomen sessile, terminated in a point: wings lanceolate, incumbent, the lower-ones shorter.

SPECIFIC CHARACTER

AND

SYNONYMS.

Abdomen black: thorax rather hairy, a yellow stripe on each side before the base of the wing.

SIREX SPECTRUM: abdomine atro, thorace villoso, litura ante alas lutea. *Fab. Syft. Ent.* 3. 26.—*Spec. Inf.* 1. p. 419. 109. 6.

Sirex spectrum. *Lin. Syft. Nat.* 2. 929. 3.—*Fn. Sv.* 1574.—*Degeer. Inf.* 1. *tab. 36. fig. 6.*—*Schæf. Icon. tab. 4. fig. 9. 10.*

This

This species bears much resemblance to some Insects of the Ichneumon genus. We have found it among the leaves of the horseradish in June.

All the *Sirices* are rare in England. *Sirex spectrum* is an active and vigorous creature, and which cannot be taken without danger of its stinging. The sting is small, and fine as a needle, but formed of such hard or horny substance, that it will pierce the finger to the bone.



PLATE CXCVII.

SIREX GIGAS.

LARGEST TAILED WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a thick horny truncated short denticulate mandible: feelers four, the hind ones longer and thicker upwards: antennæ filiform, of more than twenty-four joints: sting exserted, serrated, and stiff: abdomen sessile, and terminating in a point: wings lanceolate, incumbent, the lower ones shorter.

SPECIFIC CHARACTER

AND

SYNONYMS.

Abdomen of nine segments; the 3, 4, 5, 6, black; the others yellow: thorax hairy.

SIREX GIGAS abdomine ferrugineo: segmentis. 3. 4. 5. 6 nigris, thorace villoso. *Linn. Syst. Nat.* 2. 928. 1.—

Fn. Sv. 1573.

Fab. Ent. Syst. 2. p. 124. 139.

Roef. Inf. 2. *Vesp.* tab. 8. 9.

Sulz. Hist. Inf. tab. 18. fig. 114.

Schæff. Icon. tab. 1. fig. 2. 3.

Reaum. Inf. 6. tab. 31. fig. 1. 2.

Degeer Inf. 1. tab. 36. fig. 1. 2.

Seb. Mus. 4. tab. 53. fig. 15.

The *Sirex* genus, as it stands in the *Entomologia Systematica* of Fabricius, includes only twenty-six species; these are chiefly European Insects; but very few are natives of this country. The *Sirex Gigas* is found in the north of Europe; it has been taken in England, but very rarely: Yeats and Berkenhout mention it as a British species, and we have been informed that it is sometimes taken in Scotland. It is likely to be met with in Pine forests, as the female seems to prefer that wood to deposit her eggs in. As no English Entomologist has attempted to describe the particular habits of this tribe of Insects, and especially of *Sirex Gigas*, the following particulars may be satisfactory to our readers.

The extensive forests of Germany furnished the accurate Roefel with many opportunities of discovering and observing the transformations of Insects that are rarely to be found in other parts of Europe; and this enabled him to afford the world a particular description and series of figures of all the changes of *Sirex Gigas*, in the *Bombyliorum et Vesparum* of his *Insekten Belustigung*. His figure of the female Insect agrees with that we have given; the male is considerably smaller, and has no sting*. The sting of the female consist of three parts, a sheath which divides into two parts or valves, and a fine instrument somewhat resembling a needle: it is with this instrument it wounds its enemies, and the sting is said to cause an excruciating pain. The microscope discovers this part to be beset with a number of very minute teeth, like the edge of a saw; and with this instrument the creature can pierce the wood of the soundest trees. We suspect, indeed, that it does not often deposit its eggs in such as are decayed, but rather in those which will supply the larva when hatched with nutritive juices, such as can be derived only from healthy and fappy timber. The eggs are laid in clusters of two or three hundred together; they are of a pale yellow colour, about the thirtieth part of an inch in length, and shaped like a weaver's shuttle. The larva lives in the body of the tree, enlarging its habitation as it increases in size, for it never leaves the tree till it becomes

* This is a generical distinction.

a winged creature. The larva, when full grown, is about an inch and a quarter in length, and as thick as a goose quill. It is a heavy sluggish creature, almost cylindrical, the head very small, and the whole of an uniform pellucid yellowish colour. It has a small spine at the end of the body like those by which the larva of some spinges are distinguished: this spine is also a striking character in the perfect Sirex. In the pupa the form of the winged creature is more visible than in the larva state; it is of a browner colour than the larva, and the rudiment of the sting and legs are very visible.

In the early editions of the *Systema Naturæ* of Linnæus, the Sirices are arranged with the ichneumons in one genus; but later observations induced Linnæus to make two genera of them in his last works. *Geoffroy* and Schæffer have added some particulars to the Linnæan generic character; these principally relate to the number of joints in the tarsi.



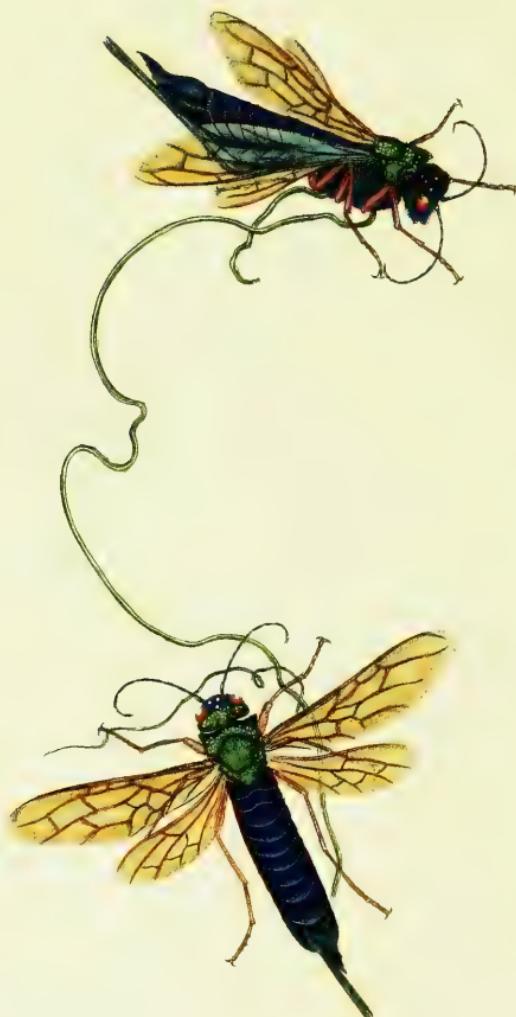


PLATE CCCXCVI.

SIREX JUVENCUS.

BLUE-BODIED TAILED-WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mandible thick, horny, truncated at the tip, and denticulated: jaw incurvated, pointed, cylindrical, and ciliated: feelers four, posterior pair longest, and thicker towards the extremity: antennæ filiform, of more than twenty-four equal joints: sting exserted, stiff, and ferrated: abdomen sessile, and terminating in a point: wings lanceolate.

SPECIFIC CHARACTER.

AND

SYNONYMS.

Abdomen deep blue: head and thorax greenish black, and villous.

SIREX JUVENCUS: abdomine atro-cærulescente, thorace villoso unicolo. *Linn. Faun. Suec.* 1575.—*Linn. Syst. Nat.* 2. 929. 3.—*Gmel. Linn. Syst. Nat.* 2672. *Fabr. Spec. inf.* 1. p. 419. n. 6.—*Mant. inf.* 1. p. 257. n. 8.—*Ent. Syst. T.* 2. p. 126. 9.

Urocerus. *Schæff. icon. t. 205. f. 3.*
Sulz. hist. Inf. t. 26. f. 9. 10.

We possess an English specimen of this very scarce and beautiful insect, *Sirex Juvencus*, in the cabinet of the late Mr. Drury, but whether

whether he caught it himself, or in what manner he obtained it, is entirely unknown to us.—However, a second specimen of the same insect, upon which we may be allowed to speak with more confidence, was lately communicated to us by Mr. Milton, engraver; who caught it as it rested against a window in one of the upper apartments of his house in Martlett's Court, Bow Street.—It is not undeserving of remark to the early entomologist, that many of our most choice, and rare insects, have occurred by accident in similar situations, and have never perhaps been found in any other.

This insect inhabits woods. There is a variety of it with yellow antennæ instead of black, and which sometimes has the legs yellowish instead of rufous.



PLATE CCCXXIX.

SPHEX APPENDIGASTER,

SMALL-BODIED ICHNEUMON WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth armed with jaws, no tongue. Antennæ consist of ten articulations. Wings extended, without folds, and laid horizontally upon the back. Sting sharp and pointed, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black. Abdomen small, joined to the thorax by a footstalk. Posterior legs very long.

SPHEX APPENDIGASTER : atra abdomine petiolata brevissimo, pedibus posticis longissimis. *Linn. Syst. Nat. 2. 945. 12.—Gmel. Linn. Syst. Nat. p. 2723. 245. sp. 12.*

EVANIA APPENDIGASTER : atra abdomine petiolato brevissimo dorso thoracis imposito, pedibus posticis longissimis. *Fab. Ent. Syst. T. 2. 141. 1. Degeer. Inf. 3. 394. tab. 30. fig. 14. Reaum. Inf. 6. tab. 31. fig. 13.*

The novelty of this creature will be immediately obvious to those in the slightest degree acquainted with the hymenopterous tribes of Insects. At first sight it has the exact appearance of an Insect deprived of the body, for the abdomen is extremely small in proportion to the other parts, and so much recurved or bent under the posterior part of the thorax as to be scarcely visible.

It is not more remarkable for its singularity than rarity, for we have ventured to introduce it as an English Insect on one authority only.—A specimen of it was lately taken by the Rev. James Coyte of Ipswich, in Suffolk. We have it from the South of Europe.

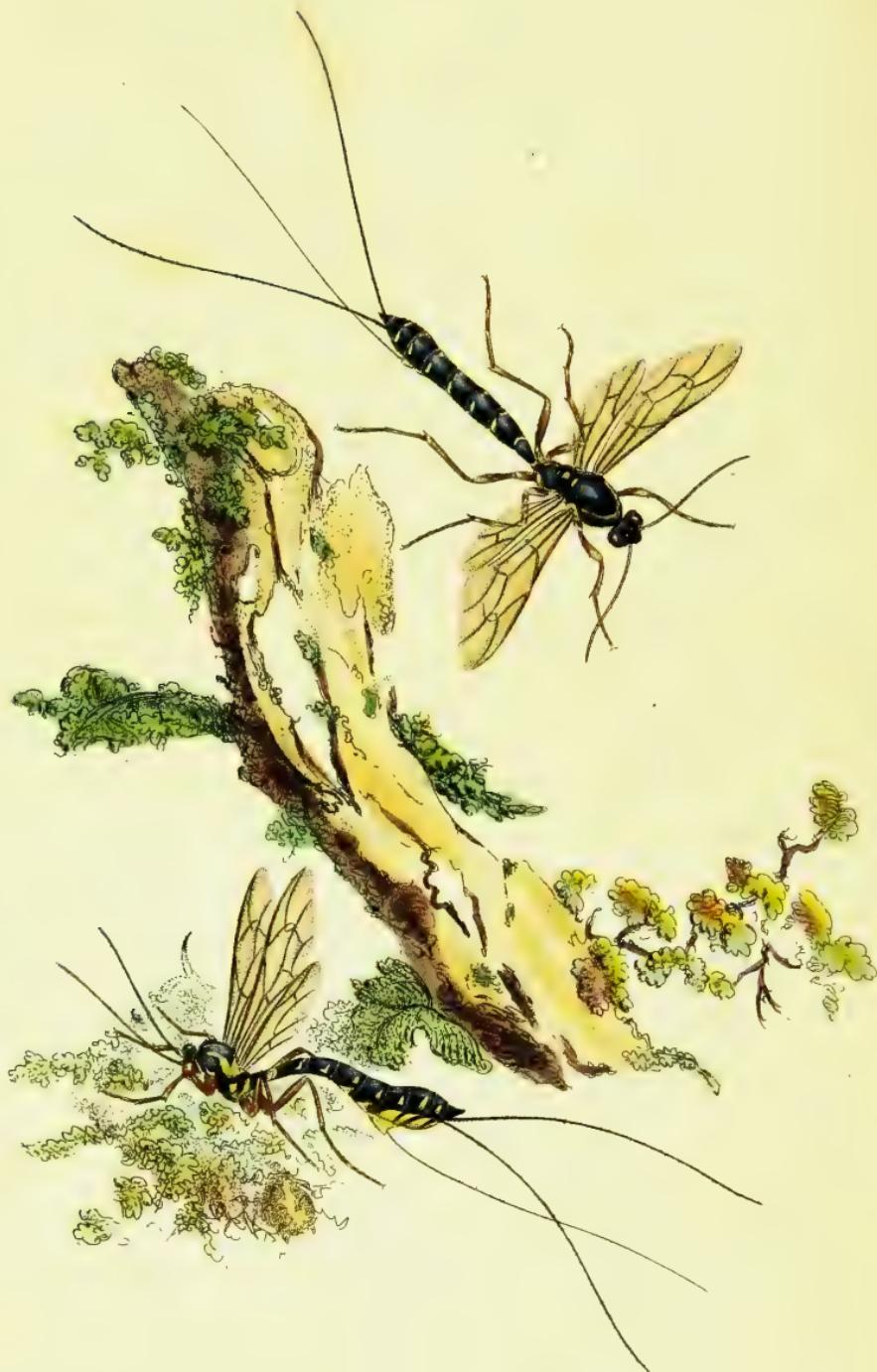


PLATE DXXII,

ICHNEUMON PERSUASORIUS,

HYMENOPTERA,

GENERIC CHARACTER.

Mouth with a straight horny membranaceous bifid jaw, the tip rounded, and ciliated: mandibles curved and sharp: lip cylindrical, membranaceous at the tip, and emarginate: feelers four unequal and filiform, and seated in the middle of the lip: antennæ setaceous, of more than thirty joints: sting exserted, inclosed in a cylindrical sheath, composed of two valves, and not pungent.

SPECIFIC CHARACTER

AND

SYNONYMS.

Scutel white: thorax spotted: all the segments of the abdomen with two white dots on each side.

ICHNEUMON PERSUASORIUS: scutello albo, thorace maculato, abdominis segmentis omnibus utrinque punctis duobus albis Linn. Syst. Nat. 2. 932. 16.—Fn. Sv. 1593.—Fabr. Ent. Syst. T. 2. 145, n. 49.

P L A T E DXXII.

This curious species is a native of the North of Europe, and Germany. Linnæus describes it as a Swedish insect; Panzer and Schaeffer as an inhabitant of Germany; and Walckenær as being found in the environs of Paris. In Britain it is very rare: we have only heard of three British specimens, one of which was taken by Mr. W. J. Hooker of Norwich.—Its transformations are not described by any writer.

The figures in the annexed plate represent the species in its natural size.



PLATE CCCCLXXVIII.

ICHNEUMON BILINEATOR.

BILINEATED ICHNEUMON.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a straight horny membranaceous bifid jaw, the tip rounded and ciliated : mandibles curved, sharp ; lip cylindrical, membranaceous at the tip, and emarginate : feelers four, unequal, filiform, and seated in the middle of the lip : antennæ setaceous, of more than thirty articulations : sting exserted, inclosed in a cylindrical sheath composed of two valves, and not pungent.

SPECIFIC CHARACTER.

ICHNEUMON BILINEATOR : black : two incurvate yellow lines on the head : scutel and antennæ in the middle whitish.

ICHNEUMON MOLITORIUS var. ?



This curious insect resembles, in a very peculiar degree, the Ichneumon molitorius, from which it is, however, distinguished by its superiority in size, and the two yellowish lines on the back part of the head : these lines are placed between the eyes as remotely as possible, each forming a marginal fillet, which partially surrounds the contiguous eye. We scarcely feel authorized in the persuasion of its being only a variety of the above-mentioned insect, although, from its general aspect,

aspect, this opinion does not appear altogether improbable : to us it seems rather a distinct species than variety. Many examples of *Ichneumon molitorius* have occurred to our own observation, but we have never perceived in any of these the slightest trace of the yellow lines, so conspicuous on the head of the present insect.

The specimen, from whence the above figure is taken, is the only one of its kind with which we are acquainted.



PLATE CCCCLXXVI.

FIG. I. I.

ICHNEUMON LEUCORHÆUS.

WHITE-TAILED ICHNEUMON.

GENERIC CHARACTER.

Mouth with a straight horny membranaceous bifid jaw: the tip rounded and ciliated: mandibles curved, sharp; lip cylindrical, membranaceous at the tip, and emarginate; feelers four, unequal, and filiform, and feated in the middle of the lip: antennæ setaceous, of more than thirty articulations: sting exserted, inclosed in a cylindrical sheath composed of two valves, and not pungent.

SPECIFIC CHARACTER.

ICHNEUMON LEUCORHÆUS. Head and thorax black: body sub-globose, and rufous, terminating in a black band, and yellowish white tip.

Ichneumon octogesimus primus. Schaff. *Icon. pl. 187. fig. 1.*?

The smaller figure denotes the natural size of this curious insect, the larger being considerably magnified. The globosity of the abdomen is remarkable, but not peculiar to this species. Its legs are brown and black, and the antennæ rather longer than the wings. We have reason to believe this a rare species.

FIG. II. II.

ICHNEUMON COSTATOR.

YELLOW-MARGINED ICHNEUMON.

SPECIFIC CHARACTER.

ICHNEUMON COSTATOR. Head and thorax black : body black, with the surrounding margin, and edge of the segments yellow.

A minute species, the natural size of which is represented by the smaller figure, No. I.



P L A T E X L I I .

F I G. I.

I C H N E U M O N R A M I D U L U S .

H Y M E N O P T E R A .

Wings four; generally membranous. Tail of the females armed with a sting.

G E N E R I C C H A R A C T E R .

Ichneumon. Jaws, without tongue. Antennæ of more than 30 joints, long, filiform, vibrating. Sting within a bivalve sheath.

S P E C I F I C C H A R A C T E R .

Tawny brown. Thorax beneath, and extremity of the abdomen, black. Abdomen curved and compressed.

F I G. II.

I C H N E U M O N R A P T O R I U S .

S P E C I F I C C H A R A C T E R .

Head, thorax, and extremity of the abdomen black; center spot of yellow on the thorax; and two first divisions of the abdomen bright orange. Legs black and brown.

Ichneumons are the most voracious of all the winged Insects;—in their nature, robust and powerful, and armed with a formidable sting; they are the dread, and destroyer of other tribes, and mortal enemies to each other; like the animal * whence their significant appellation is derived, they exist by rapine and plunder, and support their infant offspring on the vitals of larger Insects.

The female Ichneumon, when ready to lay her eggs, is seen eagerly rushing from one plant to another, if its prey offers, which is generally the Larva of the *Phalæna*, *Papilio*, &c. it darts down with the ferocity of an eagle, and grasps the tender body in its claws; it is now in vain that the unwieldy animal attempts resistance, as all its efforts are but the sport of a savage conqueror. For raising the body almost upright, or into the form of a bow, the creature returns it in an instant, and dashes the sting up to the base, in the softest part of the caterpillar's body; this, if undisturbed, it will repeat thirty or forty times, always choosing a fresh spot for every new wound, and often entirely scarifying the Insect. The stung animal refuses to eat, and sometimes its illness terminates in its death, though generally the eggs are matured, and the Insects produced from the living body, so that if it survives its misery, and the wounds heal, the heat of the body ripens the embryos, and the young Ichneumons gnaw, and tear large passages through the body, to complete their delivery. July and August are the Months those species we have described are on the wing.

* The Ichneumon is a well known animal in Egypt, particularly near the river Nile, and are useful for destroying the Eggs of the Crocodile, &c.



PLATE CCCLXXIX.

CHALCIS CLAVIPES.

THICK-LEGGED CHALCIS.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with a horny, compressed, and sometimes elongated jaw: feelers four, equal: antennæ cylindrical, fusiform, first joint rather thickset; thorax gibbous, lengthened behind, and obtuse: abdomen small, rounded, and subpetiolate: posterior thighs thickish.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black: thighs of the hind legs thick, and rufous.

CHALCIS CLAVIPES: atra, femoribus posterioribus incrassatis rufis.

Fabr. Mant. Ins. 1. p. 272. n. 2.—Ent. Syt. T. 2. 195. n. 2.—Hybn. Naturf. 24. 56. 19. tab. 2. fig. 23.—Ross. Faun. Etrusc. 2. 58. 803.—Gmel. Syt. Nat. T. 1. p. 5. 2742. n. 2.

This very curious species of Chalcis is certainly undescribed as a British Insect. The specimen from which the figures in our plate are copied, and which is in our own cabinet, was taken in the vicinity of Faversham, in Kent. This is not the only instance within our knowledge of its being caught in England; we find one speci-

men of it in the English cabinet of the late Mr. Drury. Independently of these, we have seen also two examples of it in the collection of T. Marsham, Esq. that were taken by himself in Kensington Garden, some years ago. These are, however, the only British specimens of *Chalcis Clavipes* we are acquainted with, from whence we may presume to think it very far from common. Fabricius, upon the authority of Hybner, describes it as an inhabitant of Saxony; a specimen of it from France, occurs in the cabinet of A. M'Leay, Esq.

The smallest Figure denotes the natural size.



PLATE VII.

CHRYYSIS IGNITA.

COMMON GOLDEN WASP.

HYMENOPTERA.

Wings four, generally membranous. Tail of the females armed with a sting.

GENERIC CHARACTER.

Mouth horny and advanced : jaw linear, much longer than the lip, emarginate, and membranaceous at the tip : no tongue : Palpi four, projecting, unequal and filiform. Antennæ short, filiform, of twelve joints, the first of which is longest. Body golden, shining, and glossy ; abdomen arched beneath with a scale on each side : tail usually dentated : sting partly exserted. Wings flat.

SPECIFIC CHARACTER

AND

SYNONYMS.

Glabrous, shining, thorax green, abdomen golden, with four teeth at the extremity.

CHRYYSIS IGNITA: glabra nitida, thorace viridi abdomine aureo: apice quadridentato. *Fn. Suec.* 1665.—*Gmel.*
Linn. Syst. 2745. sp. 1.

Exotic Insects, or at least those of the East, or West Indies, for the effulgence and beauty of their colouring in general, claim a superiority over the natives of this climate ; but the appearance of this Chrysis before the speculum of an opake microscope, may vie with many of the most favourite foreigne s hitherto discovered ; the richness of changeable colours blending into each other, according to the variations of the light reflected on the surface, is such that we freely confess our inability, or even the inability of art, to equal ; it though we trust our figure will give some idea of the delightful appearance of the original.

The Fly of the natural size is given on the foreground, the magnified figure above.

It commonly constructs its habitation in the chinks of old walls, or decayed trees, but prefers a situation near the entrance of woods, where it may reside in silent security. If attacked by any Insect of equal size, it is generally victorious, for such is the amazing strength of its almost impenetrable coat, that it will encounter the spider without much apprehension of danger ; and as its strength protects it from many injuries which Insects with tender bodies are exposed to ; the species multiplies, and is not uncommon in several parts of the country. It rarely appears from its retreat until the middle of the day. Not unfrequent among fruit-trees in gardens in hot weather, when the sun shines bright.

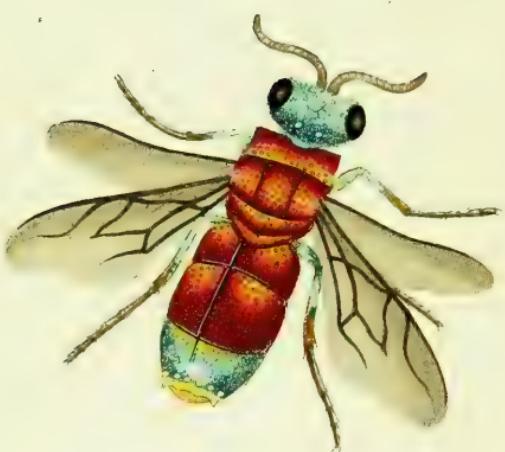


PLATE XIX.

CHRYYSIS BIDENTATA.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny and projecting: lip much shorter than the jaw, which is linear, membranaceous, and emarginate at the tip: no tongue: feelers four, unequal, and filiform: antennæ short and filiform, and consisting of twelve articulations, the first longest: body golden, and polished: abdomen arched beneath, with a scale each side: tail generally toothed: sting pungent and nearly concealed: wings flat.

SPECIFIC CHARACTER

AND

SYNONYMS.

Glabrous, blue: thorax bidentate, and with the two first segments of the abdomen golden.

CHRYYSIS BIDENTATA: glabra, nitida cyanea, thorace bidentato abdominalisque segmentis duobus primis aureis. *Fabr. Sp. Inf. 1. p. 456. n. 9.*

The Chrysis bidentata is scarcely so large, and by no means so common as the Chrysis ignita, but is fully equal if not superior in the beauty and richness of its colours to that splendid little insect. The head, and third or extreme segment of the body is blue, changeable

able to green and purple; and the thorax together with the two first segments of the abdomen crimson, with a metallic brilliancy resembling burnished gold; it is also besprinkled with specks of a golden lustre, which renders it a most superb object for the microscope.

This insect is found in May or June, sometimes on fruit-trees, or in dead walls exposed to the mid-day sun, like its analogous species, *C. ignita*.



PLATE CCXXXV.

CHRYYSIS CYANEA.

HYMENOPTERA.

Wings four: generally membranous. Tail of the females armed with a sting.

GENERIC CHARACTER.

Mouth horny, projecting: jaw linear, membranaceous and emarginate at the tip: no tongue: feelers four, unequal and filiform: antennæ short and filiform, and of twelve articulations, the first longer: body golden and polished: abdomen arched beneath with a scale on each side: tail generally toothed: sting pungent, nearly concealed: wings flat.

SPECIFIC CHARACTER

AND

SYNONYMS.

Glossy, shining, thorax and abdomen blue: tail tridentate.

CHRYSIS CYANEA; *glabra nitens thorace abdominisque cæruleis, ano tridentato.* *Linn. Syft. Nat. 2. 948. 5.—Fn. Sv. 1667.*

Fab. Ent. Syft. 2. 147. p. 243. 20.

Vespa cærulea nitens. *Geoff. Inf. 2. 484. 23.—Schæff. Icon. tab. 81. fig. 5.*

The natural size of this Insect is given at Fig. I. in the annexed Plate. It is far inferior in beauty to either *Chrysis ignita* or *bidentata*, figured in the early part of this work; but as the genus is very limited, we have given a figure of this species. It is an abundant on all kinds of fruit-trees in the summer.



PLATE CCCCXCVII.

FORMICA RUFA.

RUFOUS ANT.

HYMENOPTERA.

GENERIC CHARACTER.

Feelers four, unequal, with cylindrical articulations, placed at the tip of the lip, which is cylindrical, and nearly membranaceous: antennæ filiform: a small erect scale between the thorax and abdomen: females and neuters armed with a concealed sting: males and females furnished with wings, neuters wingless.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black: thorax compressed, and with the legs ferruginous.

FORMICA RUFA: nigra, thorace compresso pedibusque ferrugineis.

Fabr. Sp. Inf. 1. p. 489. n. 6.—*Mant. Inf.* 1.
p. 308. n. 7.

FORMICA FUSCA? *Geoff. Inf.* p. 2. p. 428.



Except the *Formica herculanea*, to which the present species bears a striking resemblance both in appearance and magnitude, this is one of the largest species of the ant tribe found in Europe. Like the former,

former, it inhabits woods, and resides chiefly in hollow trees. The neuters, as in the rest of the genus, are wingless.

The figure in the upper part of the plate is magnified, the lower represents it in its natural size.



PLATE DIII.

FORMICA RUBRA.

RED ANT.

HYMENOPTERA.

GENERIC CHARACTER.

Feelers four, unequal, with cylindrical articulations, placed at the tip of the lip, which is cylindrical, and nearly membranaceous: antennæ filiform: a small erect scale between the thorax and abdomen: females and neuters armed with a concealed sting: males and females furnished with wings, neuters wingless.

SPECIFIC CHARACTER

AND

SYNONYMS.

Testaceous: eyes and dot under the abdomen black.

FORMICA RUBRA: testacea, oculis punctoque sub abdomine nigris.
*Linn. Fn. Suec. 2. n. 1725.—Fabr. Sp. Inf. 1.
 p. 490. n. 9.—Mant. Inf. 1. p. 308. n. 11.—
 Formica minima rufa, Ray.*

Inhabits woods, and lives in nests under stones. During the winter they remain torpid, like most others of this genus.



PLATE CCXII.

MUTILLA EUROPÆA.

EUROPEAN MUTILLA.

HYMENOPTERA.

GENERIC CHARACTER.

Antennæ filiform : feelers four, the articulations obconic, seated on the tip of the lip : jaw membranous at the apex : lip projecting : in most species no wings : body pubescent : thorax retuse behind : sting pungent and concealed.

SPECIFIC CHARACTER

AND

SYNONYMS.

Head black : thorax red : abdomen black ; margins of some segments whitish.

MUTILLA EUROPÆA : nigra thorace rufo, abdominis segmentis margine albo.—*Fab. Ent. Syst. t. 3. 368. 9.*

Mutilla Europæa, nigra abdomine fessiis duabus albis, thorace antice rufo.—*Linn. Syst. Nat. 2. 966. 4.—Fn. Sv. 1727.*
Sulz. Hist. Ins. tab. 27. fig. 23. 24.

Apis Aptera : *Udm. Diff. 98. tab. 17.*

The Mutillæ seem less clearly defined than most of the Linnæan genera. That author described only a small number of the species, and was even doubtful whether several that were placed under that division of his system did not more properly belong to some other, especially to the ichneumons, among which several apterous Insects are included.

The cause of this uncertainty may be partly attributed to our entire ignorance of their manner of life or transformations. Some of the Mutillæ have wings, and others are without. Authors have considered the apterous Insects as the females, and the winged kind as males, which opinion is countenanced by numberless instances in almost every tribe of Insects. Others have however maintained that both males and females are winged, and that the apterous Insects never mature, giving in support of such opinion, that the *Mutilla Europæa* fonders like the Wasps, Ants, and Bees.—From observations on a number of exotic species of this tribe, we have no doubt that the winged Insects are males, and the apterous kind females.

Yeates alludes to three species of Mutillæ that have been found in England, but names no other than the *Mutilla Europæa*; and this is the only kind we have ever found. We have taken it on a sandy pathway, near the entrance of Coomb Wood, Surry.



PLATE CCCCXXXVIII.

APIS QUINQUEGUTTATA.

FIVE SPOT BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in female subclavated: wings flat: sting of the females and neuters pungent and concealed in the abdomen.

SPECIFIC CHARACTER.

APIS QUINQUEGUTTATA. Black: second and third joint of the abdomen rufous: posterior ones black with five whitish dots.

SCOLIA QUINQUE-PUNCTATA. *Fabr. Ent. Syst.*

SAPYGA 5-PUNCTATA. *Latreille Inf.*



A scarce and very elegant species of the Melitta family. Our specimen was taken near Faversham in Kent.

The small figure resting on the leaf No. 1. represents the natural size; the upper figure is magnified.

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1



2

PLATE XCHII.

FIG. I.

SPHEX SABULOSA.

HYMENOPTERA.

Wings four, generally membranous. Tail of the female armed with a sting.

GENERIC CHARACTER.

Jaws, without Tongue. Antennæ of sixteen joints. Wings incumbent, not folded. Sting riged.

SPECIFIC CHARACTER.

Antennæ, Head, Thorax, and Legs black. Abdomen club-shaped; connected by a slender thread; orange colour; extremity black.

SPHEX SABULOSA. *Syst. Ent.* 346. 1.—*Linn. Syst. Nat.* 2. 941. 1.—*Fn. Sv.* 1648.

SPHEX, &c. *Degeer Inf.* 2. 2. 148. 4. *tab. 28. fig. 27.*

ICHNEUMON, &c. *Geoff. Inf.* 2. 349. 63.

Scop. carn. 770.

Frisch. Inf. 2. *tab. 1. fig. 6. 7.*

Sulz. Inf. tab. 19. fig. 120.

Schæff. Icon. 83. *fig. 1.*

Fab. Spec. Inf. 2. 442. 112. 1.

*Sphe*x *Sabulosa* is a very busy and voracious Insect; it sometimes subsists on vegetable matter, frequently on small flies; we have never found it common near London.

FIG.

FIG. II.

ICHNEUMON CIRCUMFLEXUS.

HYMENOPTERA.

GENERIC CHARACTER.

Jaws, without Tongue. Antennæ of more than thirty joints; long, filiform, vibrating. Sting within a bivalve sheath.

SPECIFIC CHARACTER.

Antennæ, Legs, and Body tawny. Head and Thorax black; as is also the lower part of the second joint of each hind Leg. Body curved.

ICHNEUMON CIRCUMFLEXUS. *Syst. Ent.* 341. 80.

Linn. Syst. Nat. 2. 938. 59.—*Fn. Sv.* 1631.

Not very common; found in *May* and *June*.



PLATE DXXXI.

SPHEX SPIRIFEX.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth with an entire jaw: mandibles horny, incurved, and denticulated: lip horny and membranaceous at the tip: feelers four: antennæ with ten articulations: wings in each sex incumbent and flat: sting pungent and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black: thorax hairy, immaculate: petiole of one joint, yellow, and as long as the abdomen.

SPHEX SPIRIFEX: atra thorace hirto immaculato, petiolo uniarticulato flavo longitudine abdominis. *Fabr. Ent. Syft. T. 2. 204. 24.—Schæff. Icon. tab. 38. fig. I.*

We possess an example of this curious insect in the British cabinet of the late Mr. Drury. The specimen does not exactly seem to accord with the Linnaean *Sphex Spirifex*, but rather with the acknowledged

knowledged variety of that species described by Linnæus under the name of *Ægyptia*; and is clearly the variety found by Schæffer in the environs of Ratisbon (*Ichneumon decimus septimus*) to which Fabricius refers for his species *spirifex*.

This insect is chiefly an inhabitant of the south of Europe, where it lives in societies: the nests are constructed in the fides of the mud-walls of cottages and other convenient situations; their form cylindrical, and the interior in some degree resembling a honey-comb. It preys on insects of every kind, and is in particular a great enemy to the spider, which it easily overcomes, and seems to prefer to most other food.—The size of this species is considerable.





PLATE CCCCLXVIII.

FIG. I.

VESPA FLAVICINCTA.

YELLOW BANDED WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaws compressed: feelers four, unequal: antennæ filiform, with the first joint long and cylindrical: eyes lunate: body glabrous: sting pungent, and concealed: upper wings folded in both sexes.

SPECIFIC CHARACTER.

VESPA FLAVICINCTA. Antennæ yellow, the extreme half black: head and thorax black, with yellow scutel; abdomen black banded with yellow.



A specimen of this insect occurs in the cabinet of Mr. Drury, without any information relative to its capture. It is a species of the middle size as appears from the figure in the upper part of our plate, which exhibits the natural size. This insect is not noticed in the works of any writer that we are acquainted with.

FIG. II.

AMMOPHILA ARENARIA.

LONG WINGED SAND-WASP.

GENERIC CHARACTER.

Snout conic, inflected, concealing a bifid retractile tubular tongue: jaws forcipated, and three toothed at the tip: antennæ filiform in each sex, and consisting of about fourteen joints: eyes oval: wings flat: sting pungent and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black: petiole of a single articulation, and with the first three joints rufous: wings length of the body.

SPHEX ARENARIA : *hirta nigra abdominis petiolo uniarticulato : segmento secundo tertioque rufis, alis longitudine corporis. Fabr. Ent. Syst. T. 2. p. 199. n. 2. Linn. Transf. 4. p. 206.*

Distinguished from *Sphex fabulosa* to which it seems at first glance nearly allied by the shortness of the petiole which connects the body to the thorax, that part being remarkably long, and consisting of two joints in the above mentioned species. Like that Insect *Ammophila arenaria*, inhabits sandy places, and appears most lively in the sun shine.—The figure in the lower part of the annexed plate represents this insect in its natural size.





PLATE CCCCLXII.

PHILANTHUS FLAVIPES.

YELLOW LEGGED PHILANTHUS.

Vespa Linn.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw : feelers four, unequal and filiform : antennæ filiform, the first joint longer and cylindrical : eyes lunar : body glabrous : upper wings folded in each sex : sting pungent, and concealed in the abdomen.

* Lip compressed, rounded and longer than the jaw. *Philanthus Fabr.*

SPECIFIC CHARACTER

AND

SYNONYMS.

Black : thorax spotted : abdomen yellow, with the edges of the segments and tail black.

PHILANTHUS FLAVIPES : niger thorace maculato, abdomine flavo : segmentorum marginibus anoque nigris. *Fabr. Ent. Syft. T. 2. p. 290. n. 7.—CRABRO FLAVIPES. Fabr. Mant. Inf. I. 295. 8.*



Described by Fabricius as a native of Italy, where it appears to be a rare insect ; it is likewise found in Germany and England, but is not common in either country.

PLATE

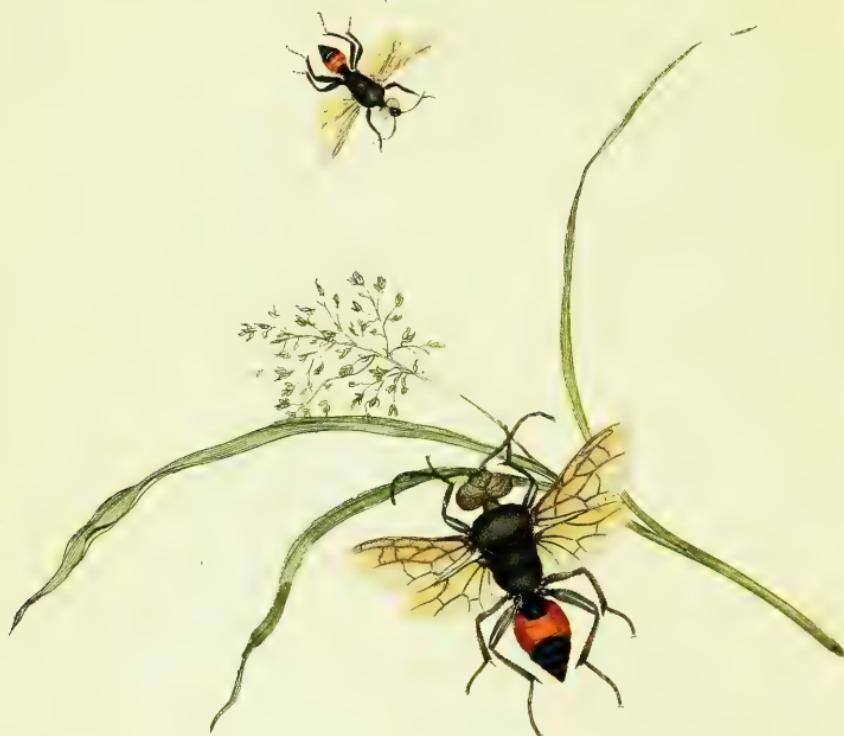


PLATE CCCCXX.

LARRA POMPILIFORMIS.

HYMENOPTERA.

GENERIC CHARACTER.

Tongue protracted, simple : jaws short, horny, vaulted : lip exserted, membranaceous at the tip and marginated : antennæ filiform.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black : abdomen black, with the base ferruginous.

LARRA POMPILIFORMIS : nigra, abdomine nigro basi ferrugineo.—
Die Grabwespenartige Drehwespe. Panz. 89.
n. 13.



A curious little insect of the Fabrician genus Larra. The only specimen we have yet seen of this insect occurs in the cabinet of Mr. Drury. The smallest figure explains the natural size.



PLATE CCCCXVI.

VESPA CIBRARIA.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw: feelers four, unequal and filiform: antennæ filiform, the first joint longest and cylindrical: eyes lunar: body glabrous: sting pungent, and concealed within the abdomen: upper wings folded in both sexes.

SPECIFIC CHARACTER

AND

SYNOMYS.

Black: abdomen banded with yellow, the middle ones interrupted: anterior shanks with concave shields.

VESPA CIBRARIA: *Linn. Syst. Nat. 12. 2. p. 945. n. 23.—Fn. Suec. 2. n. 1675.*

CRABRO CIBRARIA: nigra, abdomine fasciis: intermediis interruptis, tibiis anticis clypeis concavis. *Fabr. Sp. Inf. I. p. 470. n. 8.—Mant. Inf. I. p. 296. n. 13.*

Apis tibiis anticis lamella cribiformi. *Uddm. Diff. 94.*

Ray Inf. p. 255. n. 15.

Rolander Act Stockh. 1751. p. 56. t. 3. f. 1.

Crabro Cibrarius: *Panzer Fn. Inf. Germ.*

Found

Found in England, in Sweden, and in Germany. The male has the shanks of the anterior legs shielded, while in the female those parts are simple: this characteristic of the two sexes is not peculiar to our insect, we observe the same in the Fabrician *Crabro Clypeatus* (*Vespa Clypeata*, *Gmel.*), in *Crabro Scutatus* (*Vespa Scutata*, *Gmel.*), and several other species of the Linnæan Vespæ.

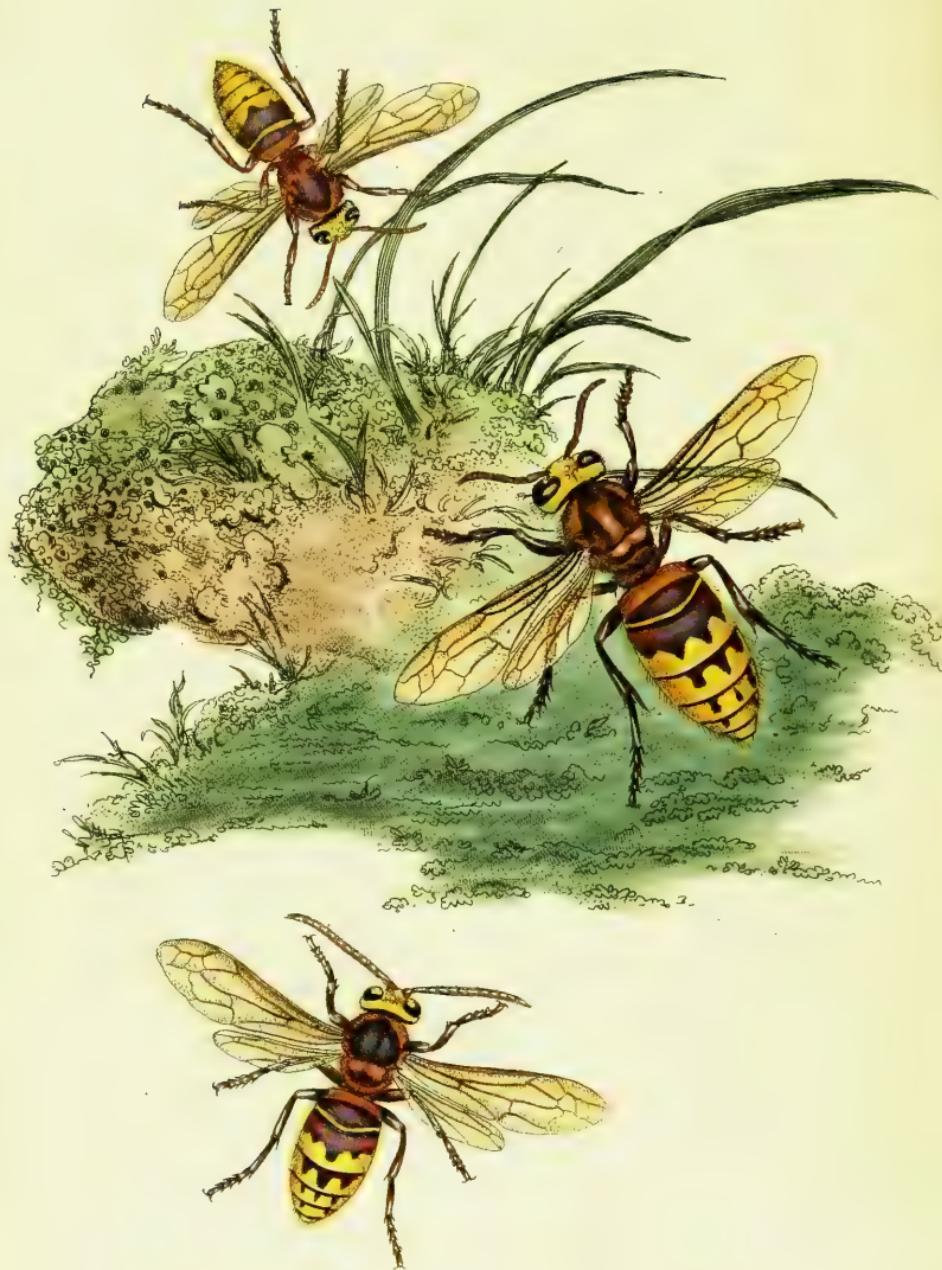


PLATE DII.

VESPA CRABRO.

HORNET.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with compressed jaw : feelers four, unequal, filiform : antennæ filiform, the first joint longer and cylindrical : eyes lunar : body glabrous : upper wings folded in each sex : sting pungent, concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNOMYS.

Thorax black : the anterior part rufous and immaculate : incisures of the abdomen with a double contiguous black dot.

VESPA CRABRO : thorace nigro : antice rufo immaculato : abdominis incisuris puncto nigro dupli contiguo. *Linn.*

Syst. Nat. 2. 948. 3.—*Fn. Suec.* 1670.—*Fabr.*
Ent. Syst. T. 2. p. 255.

Geoff. Inf. 2. 368. 1.

Schæff. Icon. 53. f. 5. tab. 136. fig. 3.

Reaum. Inf. 4. tab. 10. fig. 9.

Mouffet. Inf. 50.

The Hornet lives in societies, constructing its nest in the trunks of hollow trees, or among timber, wood-lofts, and other similar situations : the nest is capacious, being adapted for the reception of a numerous family, though smaller than that of the common wasp, and containing a less considerable number of cells : its texture resembles that of parchment, or strong paper.

In its manners of life the Hornet resembles the wasp, being, like that insect, fierce, voracious, and subsisting on fresh animal substances, on fruits, and the nectar of flowers ; and in particular committing vast havoc among the lower tribes of insects. Its animosity towards the bee is well known : it often enters the hive of these industrious creatures, and plunders them of their honey with impunity.

Both sexes of this species are shewn in the lower part of the plate, the specimens selected for which purpose rather exceed the usual magnitude. The figure in the upper part of the plate is the representation of a small variety of the same species.



PLATE CCXXVI.

VESPA VULGARIS.

COMMON WASP.

HYMENOPTERA.

Wings 4, membranous in general. Tail of the female armed with a sting.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw: feelers four, unequal and filiform: antennæ filiform, the first joint longer and cylindrical: eyes lunular: body glabrous: upper wings folded in each sex: sting pungent, and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax with a yellow interrupted line on each side: scutel with four yellow spots: abdomen yellow, with distinct black dots on the incisures.

Vespa vulgaris: thorace utrinque lineola interrupta, scutello quadrimaculato, abdominis incisuris punctis nigris distinctis. *Fab. Syst. Ent.* 364. 9.—*Spec. Inf.* 1. 460. 9.—*Lin. Syst. Nat.* 2. 949. 4.—*Fn. Sv.* 1671.

Vespa nigra luteaque, antennis totis nigris. *Degeer Inf.* 2. 2. 111. *tab. 26. fig. 7.*

Vespa thorace lineolis trium parium differentium flauves centium. *Geoff. Inf.* 2. 369. 2.

Schæff.

Schœff. Elem. tab. 130.

— *Icon. tab. 35. fig. 4.*

Reaum. Inf. 6. tab. 12. fig. 7. 8.

Most insects of the wasp genus, like those of the bee tribe, construct nests in which they deposit their eggs and rear their young. Some species are however solitary, and each individual of this kind forms a nest for itself.

The common wasp is one of the social species: they collect the nectar of flowers, and make honey, which is of an inferior quality to that of bees. They also subsist on the juices of fruits, and devour insects. The transformation of the wasps and bees are similar.



PLATE CCCCLV.

VESPA SEXCINCTA.

SIX BELLED WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw : feelers four, unequal and filiform : antennæ filiform, the first joint longest and cylindrical : eyes lunar : body glabrous : sting pungent, and concealed within the abdomen : upper wings folded in both sexes.

SPECIFIC CHARACTER

AND

SYNONYMS.

Thorax spotted : abdomen with six yellow bands, the first interrupted.

VESPA SEXCINCTA : thorace maculato : abdomine fasciis sex flavis primo interruptis. *Fabr. sp. inf. I. p. 470. n. 7.*
Mant. Inf. I. p. 295. n. 9.



Described by Fabricius as a native of Germany : it is a very rare British species, and has not been figured by any author.

PLATE CCCCLXXIV.

BEMBEX OCTO-PUNCTATA.

OCTO-PUNCTATED WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with arched and pointed jaws: tongue inflected and quinquefid: upper lip much advanced: feelers four, short, unequal, filiform: antennæ filiform, the first joint thrice the length of the others: eyes large, and occupying the whole sides of the head: body glabrous: sting pungent, and concealed in the abdomen.

SPECIFIC CHARACTER.

BEMBEX OCTO-PUNCTATA. Greenish, varied with bands and lines of black: two black dots on each of the first four segments of the abdomen.

The smaller figure in the annexed plate denotes the natural size of *Bembex octo-punctata*; the enlarged representation being intended to express its appearance before the lens of the opaque microscope.

We are not aware that any species of the *Bembex* genus has been before described or mentioned as a native of this country. The genus is rather limited in point of number, and is confined, with few exceptions, to extra European climates. *Bembex rostrata* is the most common of the European kinds, and is found in France, and other parts

parts of the continent, in some abundance, but has never, to our knowledge, occurred in England. Our present insect, and which is probably the only example of its kind hitherto discovered in this country, was taken by the late Mr. Drury, and is preserved in his cabinet now in our possession. Though extremely rare, it is not, however, to be considered as an unique insect, except as a British species, for we have observed two examples of the same kind in the splendid entomological collection of our worthy friend, A. M'Leay, Esq. F. R. S.



PLATE CCCCXCV.

FIG. I. I.

VESPA ANGULATA.

ANGULATE WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw : feelers four, unequal and filiform : antennæ filiform, the first joint longer and cylindrical : eyes lunular : body glabrous : upper wings folded in each sex : sting pungent, concealed in the abdomen.

SPECIFIC CHARACTER.

VESPA ANGULATA. Head black : thorax black, with yellow anterior margin : abdomen yellow, with triangular black spot at the base, and broad black band in the middle.



This is one of the smallest species of the wasp genus : the head and thorax black, except the margin in the front of the latter, which is yellow : the body yellow, with a peculiar angulate or triangular black spot at the base, pointing downwards, and a band of the same in the middle. The antennæ and thighs are black, legs yellow.

This insect does not appear to have been before described. The smaller figure denotes the natural size.

FIG.

FIG. II.

VESPA QUADRATA.

QUADRATÉ WASP.

SPECIFIC CHARACTER.

VESPA QUADRATA. Head and thorax black, the latter with yellow anterior margin: abdomen with a square spot of black at the base, and broad black band in the middle.

VESPA QUADRATA. *Panzer. Ins. Germ.*

Exceeds the former species in size, and differs in having a quadrangular instead of triangular black spot at the base of the abdomen, and the thorax marked in the middle with dots of yellow. This species is not uncommon.

It has not been conceived requisite to add an enlarged figure of this insect.



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PLATE CCCLXXVI.

FIG. I. I.

VESPA DECIM-MACULATA.

TEN-SPOTTED WASP.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, with a compressed jaw: feelers four, unequal, and filiform: antennæ filiform, the first joint longest and cylindrical; eyes lunœ: body glabrous: sting pungent, and concealed within the abdomen. Both sexes have the upper wings folded.

SPECIFIC CHARACTER.

VESPA DECIM-MACULATA. Black: thorax immaculate: scutell bidentated: first five segments of the abdomen, with a submarginal white dot on each side.

Nearly allied to the Linnæan *Vespa uniglumis* in point of size, and general appearance, but differing in one very essential particular: the number of white spots on the abdomen. The *Vespa uniglumis*, (*Crabro uniglumis* of Fabricius) has white marginal dots only on three segments of the abdomen; while, in our species, the first five segments have a very conspicuous white dot on each side. There are three or four other species of Linnæan *Vespa*, described by Fabricius, in his new genera *Crabro* and *Philanthus*, that seem to bear some resemblance to this insect, but which, on comparison, appear to be certainly distinct.

The head and thorax are black: body of the same colour, glossy, and spotted with white: legs yellow: thighs black. The only specimen we have yet met with of this kind, was taken in Kent. The smallest figure denotes the natural size.

FIG. II.

APIS SPHECOIDES.

SPHEx-FORMED BEE.

GENERIC CHARACTER.

Mouth horny: jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal, filiform: antennæ short, and filiform, those of the female somewhat clavated: sting of the females and neuters pungent, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

APIS SPHECOIDES. Deep black: abdomen ferruginous; base, and tip black: wings blackish.

MELITTA SPHECOIDES. Aterrima; abdomine ferrugineo, basi apiceque nigro; alis nigricantibus. *Kirby Ap. Angl. T. 2. p. 46. sp. 9.*

SPHEx GIBBA: nigra; abdomine ferrugineo apice fusco: alis primo-ribus apice nigricantibus. *Linn. Fn. Suec. 1658.—Gmel. Linn. Syst. Nat. T. I. p. 5. p. 2732.*

SPHEx GIBBA: nigra abdomine ferrugineo apice fusco, alis anticis apice fuscis. *Linn.—Fabr. Ent. Syst. T. 2. p. 212. n. 59.*

It

It will be observed, that the specific description of the Linnæan *Sphex gibba*, left us by Linnæus himself, does not very clearly express our insect, but which it now appears, upon the best authority, is certainly the one intended by that writer. This obscure circumstance has been cleared up by Mr. Kirby, who met with the remains of the authentic specimen of *Sphex gibba* in the Linnæan cabinet, and was, by that means, enabled to ascertain the species meant by Linnæus, which otherwise might have ever remained a matter of uncertainty. Fabricius, unacquainted with the insect, or more probably unable to determine the Linnæan insect from the description, is content to quote the words of Linnæus. Mr. Kirby has assigned it a new character, by which the species may, in future, be easily distinguished. In his arrangement, it stands as a *Melitta*, under the specific name of *Sphecooides*.

This insect is rather rare, our specimen was taken in Kent.

F I G. III.

APIS GEOFFRELLA.

GEOFFROY'S BEE.

SPECIFIC CHARACTER.

Black: abdomen rufous, tip and legs black: tarsi and anterior shanks reddish.

APIS GEOFFRELLA. Atra; abdomine rufo, apice pedibusque nigropiceis; maxillis, tarfis, tibiisque anticis, rufescentibus. *Kirby. Ap. Angl. T. 2. p. 45.*

Geoffroy,

Geoffroy, in his *Hist. des Insectes*, mentions this insect as a supposed variety of his *Abeille noire à ventre brun et lisse*. On the contrary, however, we are rather inclined to agree with Mr. Kirby, in believing it to be a distinct species. Its size is nearly the same as the foregoing.

FIG. IV.

APIS PUNCTATA

DOTTED BEE.

SPECIFIC CHARACTER.

Black with cinereous down : abdomen black, segments with a white dot at each side.

APIS PUNCTATA: nigra cinereo villofa abdomine atro : segmentis utrinque puncto albo. *Fabr. Ent. Syst. T. 2. 336. n. 99.*

APIS PUNCTATA. *Kirby Ap. Angl. T. 2. p. 219. sp. 35.*

Described by Fabricius as a native of this country. The figure represents it in the natural size.

FIG.

F I G. V.

APIS FLORALIS.

FLORAL BEE.

SPECIFIC CHARACTER.

Entirely yellowish-rufous: abdomen spotted and fasciated with black.

APIS FLORALIS: tota rufa, abdominis fasciis quatuor vel quinque nigris. *Scop. Ann. Hist. Nat.* 4. p. 12. n. 7.—
Gmel. Linn. Syst. Nat. 2785. 125.

APIS FLORALIS: hirsuto flavescens; thorace fulvo; abdomine maculis, fasciisque atris. *Kirby Ap. Angl.* T. 2. p. 324. n. 76.

This species of Bee is common, chiefly frequenting flowers.



PLATE CCCCXXI.

FIG. I. I.

APIS SIGNATA.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny: jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal, filiform: antennæ short, and filiform; those of the female somewhat clavated: sting of the females and neuters pungent, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

APIS SIGNATA: black; front of the head, and base of the thorax yellow.

SPHEX SIGNATA: atra, nitida, immaculata; alis albis; fronte sub antennis maculis duabus flavis. *Panz. Fn. Inf. Germ. Init. n. 53. t. 2.*

VESPA: nigra, fronte, thoracique basi flavis.—La guêpe noire, à levre superieure & base du corcelet jaunes. *Geoffr. Inf. n. p. 379. n. 14.*

VESPA PRATENSIS: *Fourcroy. Ent. Par. n. 14.*

MELITTA SIGNATA: atra; fronte maculata; abdomine segmento primo margine utrinque albo.—Var. γ antennis subtus piceis, collare tuberculisque luteis. *Kirby, Ap. Ang. T. 2. p. 41.*

This little insect is found on different species of Reseda, or mignonet, and in common with various other insects of the same natural family, that are usually found on those plants, emit a strong odoriferous scent.—There are two or more varieties of this insect: that figured by Panzer under the name of *Sphex Signata*, has two yellow spots on the front of the head, instead of the whole space beneath the antennæ being yellow, as in our specimen. The smallest figure denotes the natural size.

FIG. II.

APIS LÆVIGATA β .

SPECIFIC CHARACTER

AND

SYNONYMS.

Black, and somewhat pubescent with rufous hairs: thorax ferruginous: abdomen highly polished, with the three middle segments, pale each side at the base.

MELLITTA LEVIGATA: *atra rufo-subpubescens*; thorace ferrugineo; abdomine nitidissimo, segmentis intermediis basi pallecentibus. Kirby, *Ap. Ang.* 2. 75. 32. var. β .

This is an elegant little species, and very rare. The figure represents it in the natural size.

FIG. III.

APIS OCHROSTOMA.

SPECIFIC CHARACTER

AND

SYNONYMS.

Deep black: scutel fanguineous: abdomen rufous, variegated with spots and interrupted bands of yellow.

APIS OCHROSTOMA: atra: scutello sanguineo; abdomine rufo, maculis fasciisque interruptis, flavis, variegato.
Kirby Ap. Angl. T. 2. p. 209. n. 26.

Described by Mr. Kirby as a new species of *Apis*, from a specimen in the cabinet of Mr. Drury.



PLATE CCCCVIII.

FIG. I. I.

APIS CORNIGERA.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny: jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal, filiform: antennæ short, and filiform; those of the female somewhat clavated: sting of the females and neuters pungent, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Deep black: lip somewhat cornuted: first abdominal segment with yellow spots on the back: beneath ferruginous: abdomen variegated with yellow bands.

APIS CORNIGERA: atra, labio subcornuto; abdominis ventre basi ferrugineo, tergo maculis, faciisque flavis variegato. Kirby Ap. Angl. T. 2. p. 190. n. 11.



In the Apis Angliae above quoted it is observed, that when this insect is alive, it emits a very agreeable scent. We have never

taken this individual species alive ourselves; but we have observed a similar odour emitted by other insects of the same family.—*Apis Cornigera* is an insect liable to considerable variations; we possess several insects in our own cabinet, which appear to be varieties, as they possess the same characteristic specific marks in general, though they differ in some other particulars. It is an elegant and interesting insect.

FIG. II. II.

APIS JACOBÆÆ.

SPECIFIC CHARACTER

AND

SYNONYMS.

Deep black: legs ferruginous: abdomen with six yellow bands, the three first interrupted: antennæ above black.

Apis Jacobææ: atra; pedibus ferrugineis; scutelli punctis, abdominisque maculis fasciisque, flavis; antennis supra nigris. *Kirby Ap. Ang. T. I. p. 201. n. 20.*

Nomada Jacobææ: nigra; abdomine fasciis sex flavis, primis tribus interruptis, antennisque flavis. *Panz. F. Inf. Germ. Init. n. 72. tab. 20.*

Found in spring on the flowers of the gooseberry.



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PLATE CCCXCIX.

FIG. I. I.

APIS DRURIELLA.

DRURY'S BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Brown horny: jaw and lip membranaceous at the tip: tongue reflexed: feelers four, unequal, filiform: antennæ short, and filiform; those of the female somewhat clavated: sting of the females and neuters pungent, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black with cinereous down: antennæ fulvous beneath: last joints of the abdomen mucronated on each side.

APIS DRURIELLA: nigra, hirsuto cinerascens; antennis subtus fulvis; abdomine segmentis posticis utrinque mucronatis. Kirby. *Ap. Engl.* v. 2. p. 285. n. 62.

This very uncommon species of *Apis* is not mentioned by any entomological writer, except Mr. Kirby, whose "Monographia Apum Angliae" affords a minute description of it. Mr. Kirby described it from a specimen in the cabinet of the late Mr. Drury, and assigned it the name of *Druriella*, in compliment to that zealous collector and writer; and we are perfectly disposed, for the same reason, to adopt it. It is almost needless to add, that being in possession of the English entomological cabinet of the late Mr. Drury, our figures are delineated from the individual insect Mr. Kirby described.

The smallest insect at fig. I. I. represents *Apis Druriella* in its natural size, that above exhibits its magnified appearance.

FIG. II. II.

APIS VARIEGATA.

VARIEGATED BEE.

SPECIFIC CHARACTER

AND.

SYNONYMS.

Thorax and abdomen variegated with white: legs ferruginous.

APIS VARIEGATA: thorace abdomineque albo variegatis, pedibus ferrugineis. *Linn. Fn. Suec.* 1699.

NOMADA VARIEGATA: *Fabr. Ent. Syst. T. 2. p. 347. n. 5.*

APIS VARIEGATA: nigra; trunco, abdomineque, albido variegatis; pedibus ferrugineis. *Kirby Apium Engl. p. 222. n. 36.*

Panzer. Fn. Inf. Germ. Init. n. 61. tab. 20.

Forst. Cat. Brit. Inf. n. 1033.

Apis. n. 26.

Apis muscaria, Christii. Hymenop. p. 195. tab. 17. fig. 5.

Apis

Apis variegata, though an insect of a small size, is interesting for its rarity and elegance. This pretty species was first introduced to observation, as a British Insect, by Dr. Forster, in his "Novæ Species Insectorum Centuria prima." Since his time, it seems to have been mentioned only by Mr. Kirby, who, in his work entitled *Monographia Apum Angliæ*, observes, that he first saw this bee in the cabinet of Mr. Drury, and afterwards found it, but by no means common, in the autumn of two succeeding years, 1797 and 1798, flying about sunny banks; it is remarkable, that after the time last mentioned he never met with it.

This insect is liable to vary a little in colour in different individuals; and it is further observable, that the English specimens are smaller than those found in other parts of Europe.



PLATE CCCCLXXXIX.

APIS MANICATA.

MANICATED BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny: jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal, and filiform: antennæ short and filiform in the male, in the female subclavated: wings flat: sting of the females and neuters pungent, and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Cinereous, abdomen black, with yellow lateral spots: tail armed with five teeth.

APIS MANICATA: *cinerea, abdomine nigro, maculis flavis lateribus, ano quinque dentato.* *Fabr. Ent. Syst. n. 73.*

APIS MANICATA: *nigra, pedibus anticis hirsutissimis, abdomine maculis lateribus, ano tridentato.* *Linn. Syst. Nat. 12. n. 28.—Fn. Suec. 1701.*

Fourcroy. Ent. Par. n. 3.

Geoff. Hist. Inf. Par. 2. 408. n. 3.

Kirby. Ap. Angl. V. 2. 248. 47.

The five distinct denticles at the extremity of the abdomen form an excellent specifical distinction of this kind of bee. The species is very common in some parts of Britain. When on the wing, it is observed to hover over flowers in the same manner as *Sphinx Stellatarum*: the *Glechoma hederacea* (ground-ivy) appears to be its favourite, being found during the greater part of the summer on beds of these fragrant plants.

When the female prepares to construct the nidus in which the infant brood is to be deposited, she seeks a convenient hollow in old palings, the cavity of a wall, or other retreat eligible for her reception; and having determined the spot, she next resorts to some tomentous or woolly kind of plant, to obtain materials for the completion of her object. The portion of down required she strips or shaves off with astonishing celerity and address, conveys it away to her hiding-place in bundles between her head and fore legs, and repeats her visits till the quantity procured prove sufficient for her use. She then proceeds to line the inside of the cavity with the down, and lays her eggs, each of which is enveloped in a separate covering, composed of the same vegetable materials.

Some accurate observers of the habits of this industrious little insect have been led to imagine, that it employs only the tomentum or down of one particular kind of plant, namely, that of *Agrostemma coronaria*; and it does indeed appear, from the result of their remarks, that the nidus is in general constructed with the down of this species of vegetables. There is nevertheless some reason for believing, that the down collected for this purpose is not on every occasion confined exclusively to the plant before mentioned.



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PLATE CCCCIII.

FIG. I.

APIS IRICOLOR.

IRICOLOR BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny: jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal, filiform: antennæ short, and filiform; those of the female somewhat clavated: sting of the females and neuters pungent, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Violaceous, above glabrous: wings blackish.

APIS IRICOLOR: violacea, supra glabra; alis nigricantibus. *Kirby,*
Ap. Angl. T. 2. p. 310. n. 72.

Drury Inf. Vol. I. p. 108. tab. 45. fig. 3.

APIS VIRENS: *Christii Hymenop. p. 123. tab. 6, fig. 2.*



Apis Iricolor is, a large and beautiful species, but which, we are almost persuaded, has been introduced into the British Catalogue without sufficient reason. Mr. Kirby found it in Dr. Latham's

cabinet among his English apes; but Dr. Latham did not recollect where it was taken, or upon what authority he considers it as British. Notwithstanding this, Mr. Kirby has inserted the species in his "Monographia Apum Anglia", and, in compliance with this authority, we have ventured to introduce it into the present Work; conceiving, that after this explicit avowal of our only motive for enumerating it among the British Insects, we shall not be deemed entirely responsible for the accuracy of our information. *Apis iricolor* is well-known as a native of the West Indies. Mr. Drury's work on Exotic Insects contains the figure of a specimen he received from the island of Jamaica. It very much resembles the Linnaean *apis violacea*, but has the body violaceous instead of black, and the wings blackish instead of violet. We should observe, that the wings in our specimen of *Apis Iricolor* does not appear to be so dark or blackish in colour as in the individual figured and described by Drury; they are dusky, rather inclining to brown, and slightly glossed with green: the thorax fine blue, and very glabrous; abdomen inclining more to greenish, and the segments edged at the base with fine reddish purple.

FIG. II. II.
APIS BANKSIANA.

BANKSIAN BEE.

SPECIFIC CHARACTER

AND

SYNONYMS.

Deep black, shining, glabrous; claws rufous.

Apis Banksiana: *atra*, *nitida*, *glabriuscula*; *digitis rufis*. Kirby
Ap. Angl. T. 2. p. 179. n. 3.

Very

Very similar to the *Apis Linnæella* of Kirby, but twice its size : *Apis Linnæella* is likewise distinguished by having the extreme half of the antennæ rufous; whereas in the *Apis Banksiana*, the whole of the antennæ is black. This new species is named after Sir Joseph Banks, Bart. It is a rare insect.

The smallest figure denotes the natural size.



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PLATE CCCCXXXIV.

APIS PENNIPES.

PLUME LEGGED BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in the females subclavated: wings flat: sting of the females and neuters pungent and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Somewhat greyish and pubescent: middle legs tufted with long hairs.

APIS PENNIPES: pubescens subgrisea; pedibus secundariis elongatis crinito-pe~~c~~tinatis. *Lin. Nat. MS. in Syst. Nat.*

APIS RETUSA mas. Corpore *musculo* nigro, hirsuto-fulvo; ano nigranti, pedibus intermediis elongatis, crinito-pe~~c~~tinatis. *Kirby Ap. Angl. v. 2. p. 296. n. 69.*

APIS PLUMIPES, hirsuta, pedum mediorum metatarsis scopula atra, positi pilis rarissimis longis barbatis. *Schrank. Enum. Inf. Austr. n. 804.*

APIS PLUMIPES. *Pallas Spicil. Zool. 9. p. 24. tab. I. fig. 14.*

APIS PILIPES. *Christii Hymenopt.* p. 131. tab. 8. fig. 9. mas.
APIS HISPANICA. *Panz. Fn. Inf. Germ. Init.* n. 55. tab. 6.

This curious kind of bee appears to be described by several writers under the various names of *plumipes*, *pilipes*, and *pennipes*, in allusion to the remarkable tufts of long hairs upon the middle pair of legs, which contribute in such a striking manner both to the beauty and singular appearance of the species. Panzer describes it under the more local, and therefore more objectionable epithet of *hispanica*.

Mr. Kirby considers this as no other than the male sex of the Linnaean species *retusa*, and notwithstanding the great dissimilarity which prevails between the two insects supposed to be male and female, there is reason to apprehend, according to the observations of Mr. Kirby, that they may be really of the same species: the evidence in favour of such an opinion affords a strong presumption of the fact, although it still remains to adduce in support of it, the testimony of those circumstances which we are taught to admit as the most convincing, and unerring proof.—It has been remarked, that when this insect makes its first appearance in the spring, the down of the upper side of the body, the vent excepted, is of a reddish yellow colour, and that later in the year the hair becomes more cinereous.

This insect is very local; it is sometimes found in nests or cells constructed in old walls in pretty considerable numbers, but except in such situations is very scarce. The smallest figure denotes the natural size.

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PLATE CCCCXLII.

APIS LAGOPODA, *var.*

THICK LEGGED BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in the females subclavated: wings flat: sting of the females and neuters pungent, and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Grey: anterior legs dilated and ciliated: posterior shanks clavate: vent emarginate.

APIS LAGOPODA: grisea pedibus anticis dilato ciliatis, tibiis posticis clavatis, ano emarginato. *Linn. Syst. Nat. 2. 927.*
27.—*Fn. Suec.* 1702.—*var.*

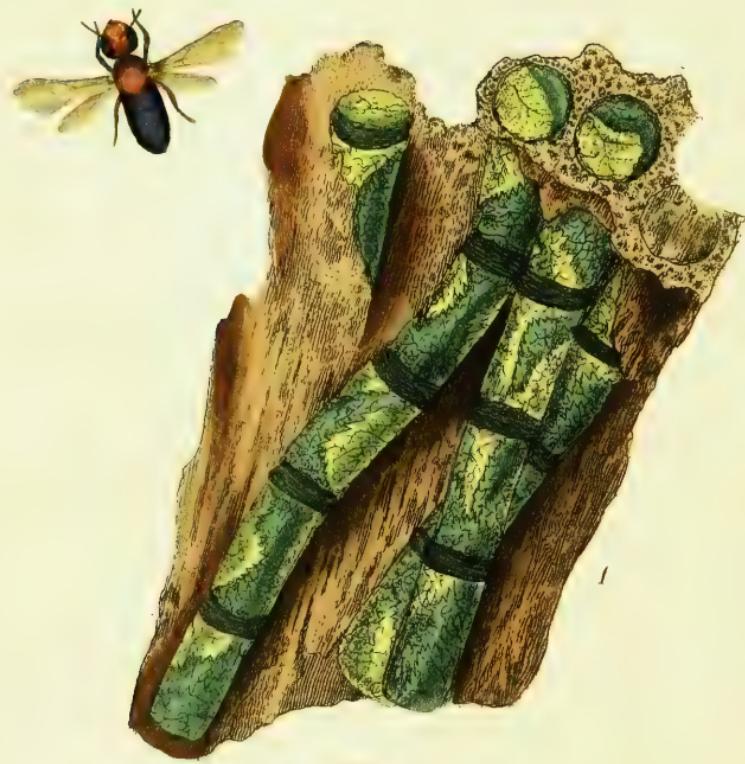
APIS LAGOPODA. *Panz. Fn. Suec.*



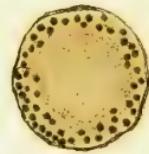
The singular dilation of the shanks of the anterior legs of this insect form a very striking character of the natural family of bees, to which

the species belongs. In the present insect the anterior legs are reddish yellow; the dilation convex above, beneath convex, and deeply ciliated with hairs of the same colour. It is a scarce species, and like its congeneris is supposed to live in the putrefient wood of willow trees.

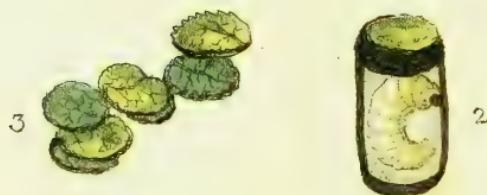
Fig. 1. represents the upper surface of the insect in its natural size; fig. 2. the underside a little enlarged. Fig. 3. the under surface of the anterior leg. Fig. 4. the upper surface.



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PLATE CXX.

APIS CENTUNCULARIS,

CARPENTER BEE.

HYMENOPTERA.

Wings four, generally membranous. Tail of the females armed with a sting.

GENERIC CHARACTER.

Jaws, with a Trunk deflexed. Antennæ elbowed in the middle, first joint longest. Wings plain. Body hairy.

SPECIFIC CHARACTER,

AND

SYNONYMS.

Black. Body long, narrow. Head, Thorax, and Legs covered with greyish hair. Abdomen smooth, beneath covered with tawny hair.

Apis Centuncularis, nigra, ventre lana fulva.—*Syst. Ent.* 385. 42.—

Linn. Syst. Nat. 2. 575. 4. *edit.* 10.

Geoff. Inf. 2. 410. 5.

Scop. carn. 799.

Reaum. Inf. 6. *tab.* 10. *fig.* 3, 4.

Fab. Spec. Inf. 1. 486. 59.

The wonderful instinct that directs the smallest Insects to provide for the safety of their future progeny, never fails to strike the attention of the inquisitive researcher into their oeconomy.—To perpetuate their

race

race is the great end of their being, and the most astonishing effort of their ingenuity and care is employed to perfect this grand design. We not only find innumerable eggs, and larvæ of Insect on all kinds of plants; in all standing waters; and in animal matter, when putrid; but many which can only be hatched from the egg by the warmth of living animals; thus the Tabanus pierces the thick hide of the Cow, and plunges its eggs into the flesh; the heat and moisture of which nourishes both in the egg, and larva; the Hippobosca equina protrudes its eggs into the *rectum* of Horses; and the Ichneumon into living Caterpillars: to those we could add many remarkable instances of Insects, who have shewn a lower species of perception, by depositing their eggs in places where the larvæ would find abundance of proper food; and with such ingenious contrivances for their safety in a defenceless state, as we could only expect from the sagacity of larger animals; but it is only our intention to premise with those general remarks, lest the subject we have chosen for our present Plate should be considered as a solitary example of such ingenuity, and care towards their future offspring.

The Natural History of the Common Bee has been both fully and ably treated of, by *Schirach*, *Maraldi*, *Reaumur*, *Debray*, and other authors of respectability, and may be supposed to be pretty generally known by those conversant in rural affairs; the manners, however, of other species of the same genus has neither been so fully explained, nor examined; they yet present a fund for the enquiries of the Naturalist, equally worthy his attention; though less beneficial; as the honey they make cannot be converted to our use.

Among the solitary Bees, some penetrate into the earth, scoop out hollow cavities; then polish the sides within, and deposit their eggs, with proper food for the larvæ, till it becomes a Pupa. Others form nests of loose sand, which they glue together with a strong cement; those nests are generally formed against walls that are exposed to the south; without, they are rude and irregular, but within are very neatly finished, and divided into several cells or apartments, in each of which the Parent Bee lodges an egg. Of our present, and a few other species, we may say,

“ In firmest oak they scoop a spacious tomb,
“ And lay their embryo in the spurious womb *.”

We find this season, the *Apis Centuncularis* has done considerable injury among the Timber Plantations in *Essex*; and we have similar information from some parts of *Cambridgeshire*. A Gentleman sent me (early in the Spring) a piece of Oak, containing a quantity of the larva, from his plantation at *Birdbrook*, in *Essex*. He informs me, several Gentlemen in his neighbourhood had found large trunks of apparently healthy Oaks, completely perforated and filled with the larva of this mischievous Insect; in many instances the trunk had been materially injured, and the cases were arranged as shewn by the horizontal Section at Fig. 4, in our Plate.—The perforations were in a longitudinal direction, several feet through the solid timber, and when the leaves were fresh, appeared as shewn at Fig. 1.

The Insect commences its operation at the upper part of the trunk of the tree; then boring in an oblique direction for about two inches or more, it follows a longitudinal course, it divides the ligneous fibres, or threads, till it forms the diameter of the cavity, which is about three-eighths of an inch, its depth various; sometimes only a few inches, at others, considerably more; when the cavity is entirely formed, and all the dust and fragments cleared away, it finishes the sides perfectly smooth; the hardest knot in the timber being insufficient to resist the strength of its jaws.—The cavity, when finished, appears divided by slight ridges, placed at the distance of about three quarters of an inch from each other; this serves to regulate the size of each apartment or cell; and it now only remains to be lined for the reception of the egg: this lining is generally composed of rose-leaves; and is applied to the apartments in a very curious manner: the Parent Bee flies with a leaf to the orifice of the perforation, where she clips it round to the size of the hole; this is forced to the bottom of the lowest cell; about seven, eight, or ten of such pieces form the first layer; it next forms the sides, or cylindrical part of the lining; this is done by laying several whole leaves partly over each

other, as shewn in our Plate, and cementing them together with a glutinous substance; thus the sides and bottom, each consisting of several layers, being finished, (in the form of a thimble) the Bee partly fills it with a kind of paste, then throws over it a small quantity of leaves, reduced to powder, and deposits the egg; the covering to the whole is formed of the same materials, and in the same manner as the bottom; when she has forced about ten or fifteen circular pieces of leaves into the avenue and cemented them to the top, the covering is completed, and the egg is completely secured from accident.—The covering separated is shewn in the Plate, at fig. 3, the larvæ, at fig. 2.

In this manner she proceeds with, and finishes every cell distinctly, till the perforation is entirely filled: in some trees forty or fifty such perforations are placed within a quarter of an inch of each other.—The Bee comes forth late in August; if the lowest is formed before those above, it eats its way up the channel, through their cases.

Mr. Adams, in his Essay on the Microscope, mentions a remarkable circumstance of a Bee (we suspect of this species). “A friend of mine (says he) had a piece of wood cut from a strong post * that supported the roof of a cart-house, full of these cells or round holes, three-eighths of an inch diameter, and about three-fourths deep, each of which was filled with these rose-leaf cases, finely covered in at top and bottom.”

* We learn this post was fir.

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PLATE CCCCX.

FIG. I.

APIS PICIPES.

HYMENOPTERA.

GENERIC CHARACTER,

Mouth horny : jaw and lip membranaceous at the tip : tongue inflected : feelers four, unequal, filiform : antennæ short, and filiform ; those of the female somewhat clavated : sting of the females and neuters pungent, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

APIS PICIPES. Black, covered with pale down : thorax tinged with fulvous : abdomen fuscous : legs rufous, pitchy.

MELITTA PICIPES : nigra, pallido-villosa ; thorace fulvescenti ; abdomine fusco ; pedibus rufo-piceis. *Kirby. Ap. Angl. T. n. p. 127. n. 66.*



Described by Mr. Kirby as a new species of his "genus Melitta from the individual specimen (Apis, n. 65, of Mr. Drury's cabinet), figured

figured in the annexed plate. It appears, the species has not been observed in any other collection.

This insect is of a moderate size, as the line describing its length at fig. 1, in the lower part of the plate is intended to shew. The prevailing colour is black, but assumes a greyish aspect from the pale downy hairs with which it is partially covered: the thorax is more villous than the body, and this villostity partakes in a slight degree of a fulvous tint; a few hairs of the same colour is also observable about the head; the antennæ are blackish; wings hyaline with the nerves pale testaceous.

FIG. II.

APIS DISJUNCTA.

SPECIFIC CHARACTER.

AND

SYNONYMS.

Black: posterior part of the thorax, and anterior part of the abdomen yellow downy: wings fuscous.

APIS DISJUNCTA: nigra thorace postice abdominisque antice tomentoso flavis, alis fuscis. *Fabr. Ent. Syst. T. 2.* 328. *n. 61.*

ANTHROPHORA DISJUNCTA. *Fabr. Syst. Piez.* 374. *n. 10.*

Among the British Apes in the cabinet of Mr. Drury (No. 38), we possess a specimen of this remarkable insect, and which we think

too

too interesting to be omitted. We cannot pretend to determine on what authority it was introduced into that collection, neither are we inclined to pledge our opinion in favour of its being a genuine British Insect; we consider only that it might have been found alive in England, and under this idea may be noticed with propriety in the present work. Mr. Kirby did not consider it as an English Insect, or he would have introduced it into his *Apum Angliae*. This insect, like *Apis Iricolor*, inserted as British in Mr. Kirby's work on the authority of a specimen in Dr. Latham's collection, is known as a native of the West Indies, and may possibly, as well as that insect, have been brought into England with some West Indian cargoes, and been afterwards discovered by accident at large in the country. Many well authenticated instances of this kind have occurred within our own knowledge. Aware of this, we cannot consistently admit an extra European insect as an aborigine, but as an occasional wanderer from the tropic regions found alive in this country; and which, from its habits of life, might even become the origin of a future British species.

We should rather suspect from the appearance of the insect, that it has been introduced in some piece of timber imported from the American islands, for it is of the same natural family as the *Apis Centuncularis*, or Carpenter Bee, which is well known to undergo its various transformations in centunculi, or small cells formed of leaves, and deposited in large hollow cavities bored through the timber by the parent female: this is not in the least unlikely, as this tribe of insects remain for a considerable period of time in the egg, larva, and pupa state, that the insect might have been deposited in the egg state in the West Indies, and was not liberated from its confinement till the timber, in which it was concealed, arrived in England.—The insect is shewn of its natural size in the annexed plate.

This species seems to be the insect described by Fabricius, as above referred to; and has not, we believe, been figured by any author.







PLATE CCCCLXIV.

APIS VESTALIS.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny, jaw and lip membranaceous at the tip: tongue inflected: feelers four, unequal and filiform: antennæ short and filiform in the males, in the females subclavated: wings flat: sting of the females and neuters pungent and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Black, hairy, tail white with black tip: thorax at the base yellow.

APIS VESTALIS: atra, hirsuta, ano albo, apice nigro; thorace basi flavo. *Kirby Ap. Angl. v. 2. p. 347. n. 95.*

Geoffr. Hist. Nat. Par. 2. p. 419. n. 26.

APIS VESTALIS. *Fourcroy Ent. Par. n. 26.*

The upper figure in the annexed plate represents the male, the lower the female, of this curious species; and both are shewn in their natural size. The female is largest, and may be furthermore distinguished by having the fulvous band at the anterior part of the thorax as well as the white fascia at the posterior part of the abdomen broader than in the other sex. The white abdominal band in the female is

K

somewhat

somewhat interrupted by the black space at the tail pointing upwards, in the male its breadth is uniform throughout.

Mr. Kirby observes that *Apis vestalis* is one of the *Bombinatrices*, which like *A. campestris* and *Barbutella* have no instruments for carrying or preparing masses of pollen. The posterior tibiae, of one specimen in his cabinet is covered from one end to the other with a thin coat of pale earth, mixed with particles of sand, which it is probable they employ in constructing their nests or cells. The species was known to Geoffroy, who describes it with accuracy except that he does not notice the black extremity of the vent*. The species is found on flowers in the summer.

* * Cette grande espèce est noire. Le haut ou la base de son corselet a une bande de poils jaunes citrons. Les deux tiers supérieurs du ventre sont noirs, ensuite il y a quelques poils jaunes, et son extrémité est blanche."



3

P L A T E LXXXVIII.

F I G. I.

A P I S T E R R E S T R I S.

H U M B L E B E E .

H Y M E N O P T E R A.

Wings four, generally membranous. Tail of the females armed with a sting.

G E N E R I C C H A R A C T E R .

Jaws, with a trunk bent downwards. Antennæ elbowed in the middle; first joint longest. Wings plain. Body hairy. Abdomen connected by a pedicel.

S P E C I F I C C H A R A C T E R .

Black, very hairy, with a yellow belt on the Thorax, one also across the Abdomen. Anus white or yellowish.

A. T. hirsuta nigra, thoracis cingulo flavo, ano albo.

Syst. Ent. 379. 5.—*Linn. Syst. Nat.* 2. 959. 41.
—*Fn. Sv.* 2709.

Bombylius major niger, linea duplice transversim ducta lutea, alia supra scapulas, alia per medium abdominis, imo abdomine albo. *Raj. Inf.* 247. 5.

Mouff. Inf. 53. t. 2.

Gaed. Inf. 2. tab. 46.

Bradl. nat. tab. 26. fig. 1. *D.*

Reaum. Inf. 6. tab. 3. fig. 1.

Frisch. Inf. 9. tab. 13. fig. 1.

The manners of the common Humble Bee are too well known to require elucidation; its dwelling is formed very deep in the earth; it

comes forth when the sun shines to extract the melliferous moisture of flowers, and is perfectly harmless unless when irritated. Linnæus describes the Anus of the *Apis Terrestris* white, but I find this is not always constant; I have several specimens that agree with the one represented in the annexed plate.

I have compared them with the specimen in the Linnæan Cabinet; they perfectly agree in every respect except in the brown or yellow colour of the extreme part of the Abdomen: they are certainly only varieties.

F I G. II.

A P I S L A P I D A R I A.

R E D - T A I L B E E .

H Y M E N O P T E R A.

A P I S .

S P E C I F I C C H A R A C T E R .

Black, hairy, Anus red-orange colour.

A. L. *hirsuta atra*, ano fulvo. *Syst. Ent.* 381. 14. *habitat lapidum in acervis.*

Linn. Syst. Nat. 2. 960. 44.—*Fn. Sv.* 1701.—
Geoff. Inf. 2. 417.

Bombylius maximus totus niger, exceptis duobus extremis abdominis annulis rufis. *Raj. Inf.* 246. 1. *Scop. Carn.* 813.

Frisch. Inf. 9. p. 25. Fig. 2.

Reaum Inf. 6. t. 1. f. 1. 4.

Schœf. Icon. Tab. 69. Fig. 9.

In the Linnæan Cabinet, (now in the possession of Dr. Smith) I find under the name *Apis Lapidaria* two insects, so very different in size, that it certainly will admit some doubt whether they ought to be

considered as the same species: Linnæus does indeed, notice this dissimilarity of their size in his description, and says one is three times larger than the other, &c. whence we may conclude that it was after mature deliberation he had ventured to place the smallest as a variety of the other*.—I do not know whether the largest has ever been taken in England; the specimen of it, in the Linnæan Collection, is a Swedish Insect: the smallest (which we have figured) is well known as a native of this country.

It is not found so frequently as most other species of the *Apis* genus; it lives among heaps of loose stones; its honey is strong.

F I G. III.

TENTHREDO VITELLINÆ.

H Y M E N O P T E R A.

GENERIC CHARACTER.

Abdomen of equal thickness, and closely united to the thorax. Sting serrated, between two valves. Second wings shortest.

SPECIFIC CHARACTER.

Antennæ clavated. Abdomen above black, very hairy, with a lateral line of rufous. Legs yellowish. Thighs behind dentated.

T. V. Antennis clavatis, abdomine supra nigro, lateribus rufis, femoribus posticis dentatis. *Syst. Ent.* 318. 6.

T. V. Antennis clavatis, ore elabiato, abdomine rufo dorso nigro, femoribus posticis dentatis.

Linn. Syst. Nat. 2. 921. 5.—*Fn. Sv.* 1535.

Stræm. Sundm. 171. *Tab.* 10. *Fig.* 11.

* “*Varietas triplo minor, vix distincta.*”

Larva virescens per aperturam ante anum tanquam e siphone aquam expuit.
Fabricius. Spec. Inf. I. 407. 7.

The Larva of this species is found on the Alder, Osier and Willow; it is large, of a green colour, and at first sight, greatly resembles the Caterpillars of some Lepidopterous Insects.

When it first appears from the Chrysalis very little of the black of the Thorax and Abdomen can be seen, those parts being at that time thickly cloathed with long brownish hairs.



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P L A T E C VIII.

F I G. I.

A P I S L A P I D A R I A.

L A R G E R E D-T A I L B E E .

H Y M E N O P T E R A.

Wings four, generally membranous. Tail of the Female armed with a sting.

G E N E R I C C H A R A C T E R .

Jaws, with a trunk bent downwards. Antennæ elbowed in the middle, first joint longest. Wings plain. Body hairy. Abdomen connected by a pedicle.

S P E C I F I C C H A R A C T E R .

Entirely black except the tail, which is red.

Linn. Syst. Nat. 2. 960. 44.

Fn. Sv. 1701.

Geoff. Inf. 2. 417.

Fabri. Spec. Inf. 1. 477. 17.

In Plate LXXXVIII. of this work I gave a figure of the Small *Apis Lapidaria*, Red-tail Bee, which is well known as a native of this country; but declined including a figure of the largest kind, until I could affirm on credible authority it had been taken in England also.

I have lately had the good fortune to be satisfied in this particular; **LORD WILLIAM SEYMOUR** favoured me with the specimen from which

which the annexed figure is copied; his Lordship told me he met with it in Wiltshire last summer, with several other rare Insects, which will appear shortly in this work,

F I G. II.

A P I S A C E R V O R U M.

BLACK BEE.

H Y M E N O P T E R A.

A P I S.

S P E C I F I C C H A R A C T E R .

Entirely Black. Hairy.

A P I S A c e r v o r u m h i r s u t a a t r a . L i n n . S y s t . N a t . 2 . 2 6 1 . 5 0 .

F n . S v . 1 7 1 7 .

S c h æ f f . I c o n . t a b . 7 8 . f i g . 5 .

This species lives in the earth, it is not often met with near London. We received it through the same channel as the former.



PLATE CCCLXXXV.

FIG. I. I.

APIS LAPIDARIA.

RED-TAILED BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny : jaw and lip membranaceous at the tip : tongue inflected : feelers four, unequal, filiform : antennæ short, and filiform : those of the female somewhat clavated : sting of the females and neuters pungent, and concealed within the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Body of the female black, hirsute, with red tail : that of the male above black, hirsute, with red tail ; face before the antennæ, and thorax at the base and apex yellow.

APIS LAPIDARIA : hirsuta atra, ano fulvo. *Linn. Fn. Suec.* 1712.—
Gmel. Linn. Syst. Nat. p. 2782. *sp.* 44.

APIS LAPIDARIA. *Fabr. Ent. Syst. T. 2.* p. 320. n. 25. *mas.*

APIS ARBUSTORUM. *Fabr. Ent. Syst. T. 2.* p. 320. n. 24. *fecm.*

APIS LAPIDARIA corpore *femineo* atro, hirsuto, ano rubro : corpore masculo supra atro, hirsuto, ano rubro ; fascie, thoracisque basi et apice, flavis. *Kirby Apium Angl. T. 2.* p. 363. n. 106.

L'abeille

L'abeille noire avec les derniers anneaux du ventre fauves. Et, L'abeille noire à couronne du corcelet citron, et extrémité du ventre fauve. *Geoffr. Hist. Inf. p. 417. n. 21 & 22.*

This bee, according to some recent observations of the Rev. Mr. Kirby, is to be considered as the neuter of *Apis lapidaria*, the female of which was figured in plate 108 of this work, and a variety β in plate 88 at fig. 2.

In size and appearance it bears the nearest resemblance imaginable to the Fabrician *Apis arbustorum*, which last Mr. Kirby ascertains to be the male of *Apis lapidaria*, a fact that would not easily have been suspected, had not opportunities been afforded of attending to its habits and manners in its native haunts. Reaumur speaks of those bees, with one or two citron coloured bands on the body, being found in the same nests with *lapidaria*. Mr. Kirby has also seen it enter the nidus of that species, but what, as he observes, appears to remove all doubts of their being the same species, he saw the supposed male infect in the collection of the late Peter Collinson, with a memorandum affixed to it specifying that he had seen it connected with *Apis lapidaria*.

F I G. II.

APIS MUSCORUM.

YELLOW-BODIED MOSS BEE.

SPECIFIC CHARACTER.

Hirsute, fulvous, abdomen yellow.

APIS MUSCORUM: hirsute fulva, abdomine flavo. *Linn. Faun. Suec. 1714.—Gmel. Linn. Syst. Nat. p. 2782. n. 46.*

APIS

APIS MUSCORUM. *Fabr. Ent. Syſt. T. 2. p. 321. n. 31.*

APIS SENILIS. *Fabr. Ent. Syſt. T. 2. 324. n. 44. Muscorum var.*

APIS MUSCORUM: hirsuto-flavescens; thorace fulvo. *Kirby Ap. Angl. T. 2. 317. 74.*

Apis Muscorum is one of the more common species of wild bee found in Europe. It frequents fields and meadows, where it forms a nest composed of moss, in cavities or holes just below the surface of the earth.

F I G. III.

APIS BARBUTELLA.

BARBUT'S BEE.

SPECIFIC CHARACTER.

Black, hirsute: anterior part of the thorax, with the scutel fulvous: abdomen subglobular, tail white.

APIS BARBUTELLA: atra, hirsuta, ano albo; vertice, thorace, anticè, scutelloque, fulvis; abdomine subgloboso. *Kirby Ap. Angl. T. 2. p. 343. n. 93.*

There appear to be more than one or two distinct varieties of this kind of bee. The Fabrician *Apis autumnalis*, *Apis saltuum*, of Panzer, and *Apis monacha*, of Christius, according to Mr. Kirby, are

are all intended for the variety β of his male *Apis Barbutella*, which he distinguishes as having the thoracic band, scutel, and base of the abdomen hirsute, with greyish hairs. The descriptions certainly accord with it so exactly, that we cannot hesitate in admitting the opinion of Mr. Kirby to be correct. *APIS AUTUMNALIS* *hirta*, thorace cinerascente: fascia nigra; abdomine atro basi cinerascente, ano albo. *Fabr.**.—*APIS SALTUUM* *hirsuta* *atra*, thorace albo fascia nigra abdome antice anoque albis. *Panz. Faun. Inf. Germ.*—Another variety has the base of the thorax and tip obscure yellowish, and the abdomen immaculate at the base. *Apis Barbutella* is not very uncommon in the summer time among flowers: the variety called by Fabricius *Autumnalis*, is seen most commonly late in the year, and on thistles chiefly.

* Described as a German insect nearly allied to *Apis ruderata* from the cabinet of Smidt. “Nimis affinis certe *A ruderata* at duplo minor. Caput atrum. Thorax hirtus, cinerascens fascia inter alas atra. Abdomen hirtum basi cinerascens, in medio atrum ano lato albo. Pedes nigri tarsis piceis.” *Fabr. Ent. Syst. T. 2. p. 324. 43.*





PLATE CCCCXCII.

APIS MELLIFICA.

COMMON BEE.

HYMENOPTERA.

GENERIC CHARACTER.

Mouth horny : jaw and lip membranaceous at the tip : tongue inflected : feelers unequal, and filiform : antennæ short and filiform in the males : in the female subclavated : wings flat : sting of the females and neuters pungent, and concealed in the abdomen.

SPECIFIC CHARACTER

AND

SYNONYMS.

Pubescent : thorax greyish : abdomen brown : posterior shanks ciliated and transversely striate within.

APIS MELLIFICA : pubescens, thorace subgriseo, abdomine fusco, tibiis posterioribus ciliatis : intus transverse striatis.

Linn. Fn. Suec. 1697.—Fabr. Sp. Inf. 1. p. 480. n. 37.—Mant. Inf. 1. p. 302. n. 42.

Apis domestica *vulgaris.* *Ray. Insect. p. 240.*

Apis gregaria. *Geoff. Inf. Par. 2. p. 407. n. 1.*

Reaum. Inf. 5. Tab. 21, 22, 23.

The Common Honey Bee is rarely found in a wild state in Britain; such as occur in this state of nature build nests in the hollows of decayed trees, which they inhabit in large societies, and are said to observe the same order and policy in the regulation of their community as when domesticated in the hive. The figures in the annexed plate are from examples discovered wild.

The two upper figures represent the male and female, that in the lower part of the plate is the figure of the neuter. The male or drone is distinguished by having the eyes remarkably large, and approximate behind, and also by the abdomen being robust, and somewhat obtuse; in the female, or queen bee, the eyes are small and remote, the wings smaller, and the abdomen remarkably large, elongated, and conic. The neuters are the working bees, and it is the office of those industrious creatures to collect the nectareous juices of flowers for making honey and wax, to feed and protect the young, and defend their society against every assailant.

